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United States Environmental Protection Agency (E.P.A.)

Environmental Appeals Board

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***1** National Pollutant Discharge Elimination System

NPDES APPEAL 03-12
NPDES PERMIT MA0003654
W W

REMAND ORDER

Syllabus

Dominion Energy Brayton Point, L.L.C. ("Petitioner") seeks review of a final National Pollutant Discharge Elimination System permit decision ("Final Permit") for Brayton Point Station ("BPS") issued by the U.S. Environmental Protection Agency ("EPA") Region 1 ("Region") on October 6, 2003, pursuant to the Clean Water Act ("CWA" or "Act"), 33 U.S.C. §§ 1251-1387. The Final Permit authorizes BPS, which is a power plant located in Somerset, Massachusetts, near the border with Rhode Island, to withdraw water from Mount Hope Bay and its tributaries for use by the facility for cooling purposes, and to discharge the then-heated water into the Bay. The Final Permit significantly restricts the amount of water that may be withdrawn and that may be discharged as compared to BPS's current operating conditions. As a result, the Final Permit's limitations will effectively require that all four of BPS's units be retrofitted from once-through, open-cycle cooling systems, to closed-cycle cooling systems that recycle the cooling water, likely costing in the range of $100 million dollars.

The intake and thermal discharge limitations are principally governed by two independent sections of the statute: CWA section 316(a), which governs BPS's thermal discharges and pursuant to which the Region granted BPS a variance from the technology-based standards of CWA section 301; and CWA section 316(b), which governs BPS's cooling water intake structures ("CWISs").33 U.S.C. § 1326(a), (b). Significantly, according to Petitioner, the conditions imposed under *each* of these independent sections of the statute effectively require Petitioner to convert to closed-cycle cooling. In its petition for review ("Petition"), Petitioner principally challenges those permit conditions limiting BPS's thermal discharges and cooling water intakes under CWA sections 316(a) and (b), 33 U.S.C. § 1326(a), (b), respectively.

On February 19, 2004, the Environmental Appeals Board ("Board") granted review of the Petition, allowing for additional briefing. During the course of these proceedings, the Board has granted amicus curiae ("amicus") status to seven entities: the States of Massachusetts and Rhode Island, the Conservation Law Foundation, Save the Bay, the Utility Water Act Group ("UWAG"), the Taunton River Watershed Alliance, Inc., and the Kickemuit River Council. On July 23, 2004, the Board denied a request from Petitioner for an evidentiary hearing. *In re Dominion Energy Brayton Point, LLC (formerly USGen New England), Brayton Point Station*, Order Denying Motion for Evidentiary Hearing, NPDES Appeal No. 03-12, slip op. at 6-10 (EAB July 23, 2004), 11 E.A.D. ___. Oral argument on this matter was held on September 9, 2004. This decision addresses the substantive issues raised by the Petition and also resolves all other outstanding motions filed in the course of this permit appeal. The Board's major holdings are summarized below.

***2** Held: The Final Permit is remanded as to the following issues:

· The Region's selection of five days as the frequency for temperature exceedance used in deriving the thermal effluent conditions under CWA section 316(a) in BPS's Final Permit. The Board finds that the Region did not provide more than a conclusory reason for its selection of this value. Without an articulation of its analysis, the Board cannot properly perform a review of the analysis and cannot det ermine whether it meets the requirement of rationality. On remand, the Region must either supplement the record with its rationale on this point or modify this value. If the Region selects the latter course, the Region must provide a sufficient explanation for the new value.

· The Region's noise impact analysis - which is an element of the Region's "best technology available" determination under CWA section 316(b) - is being remanded to the Region because the Board cannot determine whether Petitioner's co ncerns about the new noise analysis that the Region had generated in response to comments on the draft permit are legitimate given the current state of the record. On remand, the Region must supplement its response to comments with a rationale that addresses the concerns Petitioner raises on appeal regarding the new noise impacts analysis or modify the permit requirements, as appropriate.

· The production foregone re-analysis performed by one of the Region's consultants in response to comments does not appear to be attached to the consultant's report summary. Because the Region evaluated and relied on this document in developing the Final Permit, the Board concludes that it should properly be part of the administrative record. Thus, on remand, the Region is directed to place its consultant's re -analysis in the administrative record if it is not currently in the administrative record.

· On remand, the Board also directs the Region to amend the Final Permit to correct a typographical error regarding the expression of total iron limits, if this error has not, as yet, been changed via the minor permit modification process.

The Board finds no clear error with respect to all other issues raised in the Petition, including the following major issues:

· The Reg ion did not clearly err in its analysis and approach in determining the "best available technology economically achievable" ("BAT") for BPS under CWA section 301, 33 U.S.C. § 1311. The Board rejects the Region's argument that this issue is moot, but finds that the Region's determinations on this issue appear rational in light of all the information in the record. Petitioner has failed to demonstrate that the Region clearly erred in its BAT analysis or in its consideration of cos ts in its section 301 BAT analysis.

· The Region did not clearly err in its determination that Petitioner failed to demonstrate that Petitioner' s proposed variance under CWA section 316(a) met the applicable standard, which requires effluent limitations stringent enough to assure protection and propagation of a balanced indigenous community in the receiving waters. In coming to this conclusion, th e Board finds no clear error in the Region's determination regarding the balanced indigenous population under CWA section 316(a) or in the general approach used by the Region in its biological assessment.

***3** · Except as to the Region's selection of a monthly exceedance value of five days, which the Board remands for a further explanation and with respect to which the Board necessarily reserves judgment, the Board finds that the Region did not clearly err in the various determinations it made in establishing a variance under section 316(a). These determinations include the Region's general approach in performing a biological assessment, its selection of a cutoff temperature of 24 °C, its selection of 10 percent for the percent age of Bay that may be impacted by the effluent, and other factual issues underlying its development of the variance.

· The Region's application to BPS of the "best technology available for minimizing adverse environmental impact " ("BTA") standard under CWA section 316(b), using the Region's best professional judgment, is not clearly erroneous. (This conclusion is subject to the Region satisfactorily responding to the noise impact analysis issue being remanded.) We do not find persuasive Petitioner's argu ments that the Agency has rejected closed -cycle cooling as BTA, that the Agency's long-standing practice has been that BTA for existing plants is open -cycle cooling, or that Petitioner has been subject to impermissible "disparate treatment."

· Petitioner concedes that the Agency's recent rulemaking governing CWIS at existing power plants (referred to as the "Phase

II Rule"), which was issued after the Region had issued the Final Permit and while this appeal was pending before the Board, by its terms, does not apply to this permit. The Board concludes, to the extent that it may have the discretion to remand permit conditions for reconsideration in light of legal requirements that change before a permit becomes final agency action, it is not appropriate to remand the permit to the Region in this case for several reasons. These reasons include the fact that the Phase II Rule clearly was not intended to be applied and does not apply retroactively, the rule is currently being appealed in the federal courts, what BPS would be required to do under the Phase II Rule (had it been applicable) is unclear, and requiring application of the Phase II Rule BTA standard would invariably lead to an extended further delay, with substantial continued harm to Mount Hope Bay in the interim.

· Under the CWA, the Region is required to apply the more stringent of the section 316(b) technology standard or any applicable state water quality standard ("WQS"). The Region concluded that both Massachusetts' and Rhode Island's WQSs essentially require closed-cycle cooling at BPS. The Board concludes that this determination was not clearly erroneous, and thus Massachusetts' and Rhode Island's WQSs constitute additional, independent bases for the cooling water intake limits in BPS's Final Permit.

· The Board does not find the Region's approach in considering costs and in performing the "wholly disproportionate" cost analysis under CWA section 316(b) in the development of BPS's permit to be clearly erroneous. With respect to specific challenges to various cost estimates made by the Region, the Board concludes that Petitioner has failed to demonstrate clear error on the part of the Region.

***4** · With respect to the Region's biological benefits determinations under CWA section 316(b), the Board finds that the Region did "duly consider" the issues raised in the comments and that the Region's approach in estimating biological benefits appears rational in light of the information in the administrative record. In addition, the Board does not find the Region's overall approach to the benefits analysis, including its decision to consider and give weight to qualitative non-use benefits and nonmonetized benefits, to be clearly erroneous.

Before Environmental Appeals Judges Scott C. Fulton, Edward E. Reich, and Kathie A. Stein.
Opinion of the Board by Judge Reich:

This matter is before the Environmental Appeals Board ("Board") on appeal by Dominion Energy Brayton Point, L.L.C. ("Dominion" or "Petitioner")[1] from a final National Pollutant Discharge Elimination System ("NPDES") permit decision issued under the Clean Water Act ("CWA" or "Act"), 33 U.S.C. §§ 1251-1387, by Region I ("Region") of the United States Environmental Protection Agency ("EPA" or "Agency"). The Region issued the final permit decision on October 6, 2003, for Dominion's Brayton Point Station ("BPS"), which is a power plant located in Somerset, Massachusetts, and situated along Mount Hope Bay near the border with Rhode Island. *See* A.R. 3370, Ex. 1 (EPA Region 1, Authorization to Discharge under the National Pollutant Discharge Elimination System, Permit No. MA0003654 (Oct. 6, 2003)) [hereinafter Final Permit]. On appeal, Dominion challenges several permit conditions, principally those limiting the plant's thermal discharges and cooling water intakes under CWA sections 316(a) and (b), 33 U.S.C. § 1326(a), (b). *See generally* Petition for Review of NPDES Permit Issued by Region I on October 6, 2003 ("Petition").

On February 19, 2004, the Board granted review of the Petition and established a briefing schedule. *See* Order Granting Review at 5-11. In that Order, the Board also granted amicus curiae ("amicus") status to several other entities, including the States of Massachusetts and Rhode Island. *Id.* at 6-7. Oral argument on this matter was held on September 9, 2004. *See generally* Oral Argument Transcript (filed Sept. 17, 2004) ("Oral Arg. Tr."). This Order addresses the substantive issues raised by the Petition and also resolves all other outstanding motions filed in the course of this permit proceeding.

Upon consideration of all the briefs filed in this matter, as well as the arguments presented at the oral argument, we conclude that, for the most part, Petitioner has failed to demonstrate that the Region clearly erred in establishing the conditions of BPS's Final Permit. We also find no issues involving either the Region's exercise of discretion or an important policy consideration that warrant a change to the conditions of the permit. We do, however, find that a limited remand of the Final

Permit is warranted. First, we find that the Region did not provide more than a conclusory reason for its selection of a key value - the maximum number of allowable monthly exceedances - which was subsequently used in the calculation and imposition of certain challenged conditions in the Final Permit, in particular the thermal effluent limits imposed under section 316(a). Without an articulation of the Region's analysis, we cannot properly perform a review of the analysis and cannot determine whether it meets the requirement of rationality. See *infra* Part VI.A.3.b.ii.*d* for a discussion of this issue. In the second instance, we find that we cannot determine whether Petitioner's concerns about a new noise analysis that the Region had generated in response to comments on the Draft Permit are legitimate given the current state of the record. The noise impacts analysis is an element of the Region's "best technology available" determination under CWA section 316(b). We conclude that the permit must be remanded to the Region to either supplement its response to comments with a rationale that addresses the concerns Petitioner raises on appeal regarding the new noise impacts analysis or modify the permit requirements, as appropriate. See *infra* Part VI.C.3.c for a discussion of this issue. Pursuant to this remand, there are still outstanding issues concerning conditions imposed under both section 316(a) and 316(b).

***5** We also find that a re-analysis performed by one of the Region's consultants in response to comments does not appear to be attached to the consultant's report summary. [2] Because the Region evaluated and relied upon this document in developing the Final Permit, we conclude that it should properly be part of the administrative record. Thus, we direct the Region on remand to place its consultant's re-analysis in the administrative record if it is not currently in the administrative record. See *infra* Part VI.B.4.b.iii.*c*(5) for a discussion of this issue.

In addition, the Region admits that, although it had agreed in the Response to Comments document to Petitioner's request to express the total iron limit in milligrams per liter rather than pounds per day, this change was not incorporated into the Final Permit. Consequently, we also direct the Region, on remand, to amend the permit to fix this typographical error if this error has not, as yet, been changed via the minor permit modification process. *See infra* Part VI.D.

In coming to our decision in this matter, we have also considered Petitioner's motions to supplement the record as well as the other participants' motions in opposition and motions to strike certain arguments and exhibits. We deny both of Petitioner's motions to supplement the record with the documents described in those motions; however, we only grant the Region's motions to strike in part, because we allow certain "new" information raised by Petitioner concerning the final Phase II Rulemaking to be included in this appeal. *See infra* Parts V.A, VI.B.1.b.iv.

I. *INTRODUCTORY OVERVIEW*

This matter involves a number of important, complex legal issues under CWA sections 301, 316(a), 316(b), and 401 that are of regional, and potentially national, significance. In addition, the outcome of this case could have significant impacts on the permittee and the area surrounding the plant, both financially and ecologically.

This case concerns a facility and an ecosystem with fairly unique attributes. The facility is the largest fossil-fuel burning electric power plant in New England. The Final Permit challenged here imposes conditions that require a substantial retrofit of the facility at significant cost (up to $120.2 million dollars [3] according to the Region's final estimates), the cost of which will likely affect the rates charged to BPS's customers. On the other side of the equation, the case involves an important estuarine ecosystem - Mount Hope Bay - whose fisheries have shown huge decreases in productivity over the last two decades, a decline that began to become manifest around the same time that the facility's withdrawals from and discharges into the Bay appreciably increased.

Currently, the facility draws large quantities of water from Mount Hope Bay and its tributaries, uses the water for cooling purposes, and subsequently discharges the then-heated water back into the Bay, which is a relatively shallow estuarine bay. The large quantities of water used by the facility - annually, the amount used is equal to seven times the volume of the Bay - and the geography of the Bay have pivotal importance in terms of the facility's water quality impacts and its resultant obligations under the CWA.

***6** There are several points that bear noting at the outset of this decision. First, there are two drivers for the challenged permit conditions: CWA section 316(a), which governs BPS's thermal discharges, and CWA section 316(b), which governs BPS's

cooling water intake. Although some of the facts underlying the Region's determinations under these two statutory provisions overlap, as a legal matter these two sections operate independently. As discussed more fully below, in the context of this particular perm it, the conditions imposed (and the protections correspondingly derived) under *each* of these independent sections of the statute effectively require Petitioner to convert to closed -cycle cooling - a technology that Petitioner resists because, as we have me ntioned, it will require significant retrofitting at BPS and thus be very expensive to implement. Because of the independent underpinnings of the two statutory sections governing the permit, Petitioner must successfully challenge the Region's approach unde r both section 316(a) and section 316(b) to be assured of not having to install a closed-cycle cooling system at the facility. Petitioner acknowledged this fact at oral argument. Oral Arg. Tr. at 10.

Another important point is that, as we conclude below, permits issued under CWA section 316(b) must not only apply the "best technology available for minimizing adverse environmental impacts, " but also must go beyond that standard when technology alone is insufficient to meet state water quality standards ("WQSs"). Thus, in certain cases, even if the technology standard does not require closed-cycle cooling, a state's WQSs may. Here, the WQS element of the standard -setting equation is influenced substantially by the quality, size, and nature of the water body from which BPS draws and into which BPS discharges.

This decision is divided into seven parts. The next section, Part II, contains a discussion of the relevant CWA statutory sections and a brief description of the associated Agency regulations. Part III contains a summary of the facts of this case as well as the procedural history. In Part IV, we describe the standard of review we use in considering permit appeals. Part V focuses on administrative record issues in the case at hand. In that section, we add ress Petitioner's motions to supplement the record and the various oppositions to those motions as well as several other administrative issues, including Petitioner's claims that the record was inadequate and that the Region failed to rely on the record in making its permit decision. Part VI contains our analysis of the bulk of the issues raised in the Petition and is divided into four main sections. First, in Part VI.A, we address issues concerning the Final Permit's thermal discharge limitations, includin g challenges to the Region's initial baseline thermal effluent limits established under CWA section 301, challenges to the Region's rejection of Petitioner's proposed CWA section 316(a) variance, and challenges to the CWA section 316(a) variance ultimately set by the Region. Second, in Part VI.B, we address issues concerning the Final Permit's cooling water intake limitations, including questions surrounding the Region's application of the CWA section 316(b) standard, issues surrounding the Region's approac h to utilizing Massachusetts' and Rhode Island's water quality standards in setting the permit's intake limitations, issues concerning the underlying factual basis for the permit's CWA section 316(b) limitations, and issues concerning the Region's cost and economic benefits analyses. Third, in Part VI.C, we consider several alleged procedural errors, including the Region's alleged failure to respond to comments, to provide a basis for the Final Permit, and to provide an additional comment period. Next, in P art VI.D, we turn to Petitioner's challenges to terms and conditions unrelated to BPS's thermal discharges and cooling water intakes. Finally, Part VII contains a summary of our main conclusions and lists those issues tha t we are remanding to the Region for further action.

II. *STATUTORY AND REGULATORY BACKGROUND*

A. *The Clean Water Act Generally*

***7** The CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specified permitting sections of the Act, one of which is section 402. CWA §§ 301(a), 402(a), 33 U.S.C. §§ 1311(a) , 1342(a). Section 402 establishes one of the CWA's principal permitting programs, the National Pollutant Discharge Elimination System. 33 U.S.C. § 1342(a) ; *accord In re City of Moscow* , 10 E.A.D. 135, 137 n.1 (EAB 2001); *In re Town of Ashland Wastewater Treatment Facility* , 9 E.A.D. 661, 662 n.1 (EAB 2001) .[4] Under this section of the Act, the EPA may "issue a permit for the discharge of any pollutant, or combination of pollutants" in accordance with certain conditions.[5] CWA § 402, 33 U.S.C. § 1342(a) . NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. CWA § 402(a)(1)-(2), 33 § 1342(a)(1)-(2); *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs.*, 528 U.S. 167, 174 (2000).

Discharge limitations are typically derived from standards issued under either section 301 or section 306, 33 U.S.C. §§ 1311, 1306. Standards established under section 301 generally apply to existing sources, such as BPS, whereas section 306

standards apply to new sources. *See, e.g., Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 185 (2d Cir. 2004). Pursuant to section 301, the Agency establishes effluent limitations for categories or classes of point sources based on either "the best available technology economically achievable" or "the best conventional pollutant control technology," depending on the type of pollutant in question. 33 U.S.C. § 1311(b)(2)(A), (E); *see E.I. duPont de Nemours & Co. v. Train*, 430 U.S. 112, 126-29 (1977); *Riverkeeper*, 358 F.3d at 185; *Cronin v. Browner*, 898 F. Supp. 1052, 1056 (S.D.N.Y. 1995). All existing point sources were required to meet these effluent limitations by 1989. [6] CWA § 301(b), 33 U.S.C. § 1311(b); *Riverkeeper*, 358 F.3d at 185; *Cronin*, 898 F. Supp. at 1056.[7]

***8** The term "pollutant" under the CWA includes "heat"; thus, discharges of heated wastewater (i.e., thermal discharges) are regulated under the Act. CWA § 502(6), 33 U.S.C. § 1362(6); *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872, 874 (1st Cir. 1978); *see also In re Pub. Serv. Co. of Ind., Inc.*, 1 E.A.D. 590, 591 (Adm'r 1979). "Heat" is considered a nonconventional and nontoxic pollutant. *See* 40 C.F.R. §§ 401.15-.16 (listing, respectively, the pollutants considered either toxic or conventional); *Am. Petroleum Inst. v. EPA*, 787 F.2d 965, 969-70 & n.5 (5th Cir. 1986) (explaining that pollutants not classified as conventional or toxic are generally referred to as "nonconventional/nontoxic" pollutants). Consequently, CWA sections 301(b)(1)(C) and 301(b)(2)(A)[8] - which generally apply to such nonconventional, nontoxic pollutants - govern the establishment of appropriate "baseline" effluent standards for heat. 33 U.S.C. § 1311(b)(1)(C), (b)(2)(A). The latter of these provisions, CWA section 301(b)(2)(A), contains the basic technology-based standard and requires application of "the best available technology economically achievable," otherwise known as "BAT."[9] 33 U.S.C. § 1311(b)(2)(A); *see also* 40 C.F.R. § 125.3(a). The other provision, CWA section 301(b)(1)(C), requires application of "any more stringent limitation, including those necessary to meet WQSs, treatment standards, or schedules of compliance, established pursuant to any State law or regulations (under authority preserved by section [510] of [the Act]), * * * or required to implement any applicable [WQS] established pursuant to the [CWA]." 33 U.S.C. § 1311(b)(1)(C). Courts have interpreted this provision to require application of state WQSs or other state legal or regulatory requirements if these are more stringent than the technology-based limitations required by section 301(b)(2)(A). *U.S. Steel Corp. v. Train*, 556 F.2d 822, 838 (7th Cir. 1977); *In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001); *see also* 40 C.F.R. §§ 122.4(d), 122.44(d)(1), (3), (5) (all essentially requiring NPDES permits to include conditions necessary to achieve state WQSs more stringent than promulgated effluent limitations guidelines or standards).

B. *Section 316(a) of the Clean Water Act and Associated Regulations*

***9** The Act also contains a provision that specifically focuses on point sources with thermal discharges and their related cooling water intake structures ("CWISs").[10] CWA § 316, 33 U.S.C. § 1326. Section 316(a) applies to the thermal discharges and allows EPA, for a specific point source discharger, to impose less stringent effluent limitations on the thermal discharges than might otherwise be required under section 301 (or 306) when the owner or operator:

> can demonstrate to the satisfaction of the Administrator * * * that any effluent limitation proposed for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the pro[t]ection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water[11] into which the discharge is to be made.

33 U.S.C. § 1326(a); *accord Appalachian Power Co. v. Train*, 545 F.2d 1351, 1371-72 (4th Cir. 1976); *Am. Littoral Soc'y v. EPA*, 199 F. Supp. 2d 217, 237 (D.N.J. 2002). In such cases, EPA may grant a variance for the thermal component of the discharge that "assure[s] the protection and propagation of [the BIP]." CWA § 316(a), 33 U.S.C. § 1326(a). These "section 316(a) variances" are also sometimes referred to by the Agency as "alternative effluent limitations." *See* 40 C.F.R. § 125.71(a).

The Agency has promulgated regulations implementing this section of the Act, *see* 40 C.F.R. pt. 125, subpt. H, which include provisions describing the criteria and standards that are used by the Agency to determine whether alternative effluent limitations may be imposed pursuant to section 316(a) of the Act. 40 C.F.R. §§ 125.72, .73. Not only do these regulations explicitly require - as does the statute - that the permit applicant, in order to obtain a section 316(a) variance, demonstrate that

the otherwise applicable thermal discharge effluent limitations or standards a re more stringent than necessary to assure the protection and propagation of the BIP, but they also specifically require the applicant to "show that the alternative effluent limitation desired by the discharger, considering the cumulative impact of its the rmal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of a balanced, indigenous community of shellfish, fish and wildlife in and on the body of water into which the discharge is to be made."[12] *Id.* § 125.73(a). Thus, reading CWA sections 301 and 316(a) together, the statute and regulations in effect establish a three -(and sometimes four-) step framework for obtaining a variance: (1) the Agency must determine what the applicable technology and WQS -based limitations should be for a given permit; (2) the applicant must demonstrate that these otherwise applicable effluent limitations are more stringent than necessary to assure the protection and propagation of the BIP; (3) the applicant must demonstrate that its proposed variance will assure the protection and propagation of the BIP; and (4) in those cases where th e applicant meets step 2 but not step 3, the Agency may impose a variance it concludes does assure the protection and propagation of the BIP.[13]

***10** We describe these regulations more fully below. *See infra* Part VI. A.2.b.i.

C. *Section 316(b) of the Clean Water Act and Associated Regulations*

Section 316(b) governs CWISs at these point sources. 33 U.S.C. § 1326(b). It provides that standards established under CWA sections 301 or 306 and applicable to a point source "shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. "*Id.* Notably, the statute does not specify any particular technology to be used or what methods the Agency (or a state) should use to make section 316(b) determinations. *See id.*

At the time the Region issued the BPS permit, no section 316(b) regulations applicable to BPS had yet been promulgated by the Agency. While this appeal was pending, however, a final rule governing CWISs for existing sources was issued. The background and history of this rule is discussed below. *See infra* Part VI.B.1.b.i.

III. *FACTUAL AND PROCEDURAL BACKGROUND*

A. *Facts of the Case*

BPS, which is currently owned by Dominion is a relatively old (forty -year old) power plant located in Somerset, Massachusetts, on the shores of Mount Hope Bay near the border with Rhode Island. EPA Region I Response to Petition for Review at 3 ("Response"); *see also* A.R. 192, Ex. 4, ch. 3 (U.S. EPA - New England, Clean Water Act NPDES Permitting Determinations for Thermal Discharge and Cooling Water Intake from Brayton Point Station in Somerset, MA (July 22, 2002)) (hereinafter "Determinations Document" (in text) or "DPDD" (in footnotes)). According to the Region, BPS is also the largest fossil-fuel burning electric power plant in New England. Response at 3.

Power plants such as BPS typically require outside water for cooling purposes in their operations. [14] DPDD at 4 -25. Such power plants generally use one of three cooling water systems or a combination of the three: open -cycle (or once -through) cooling, once-through cooling with supplemental cooling on the discharge, or closed -cycle (or recirculating) cooling. *Id.* In an open-cycle cooling system, water is withdrawn from a nearby body of water, run through the system for cooling purposes, and then discharged by the facility into a receiving water body, without recirculation and at a higher temperature than the withdrawn water. *Id.* Thus, there is typically a substantial discharge of heat into the receiving water (the "waste heat"). *See id.* In a once-through cooling system with supplemental cooling, after the water is run through the system for cooling purposes but prior to discharging it into the receiving water body, a portion of the waste heat is removed, often by allowing the wate r to cool in helper cooling towers. *Id.* at 4-25 to-26. In a closed -cycle cooling system, the cooling water is itself run through a cooling apparatus, usually some type of cooling tower, in order to reduce the water's temperature so that it may be reused in the plant's operat ions.[15] *Id.* at 4 -26. Thus, instead of being discharged into the water, waste heat is released into the atmosphere. *Id.*; *see also* Petition at 6 n.7.

***11** BPS currently uses an open -cycle cooling system in all four of its units. [16] "DPDD" at 3-1; *see also* Response at 5. In

particular, BPS withdraws water from the Taunton and Lee Rivers in order to cool (or condense) steam within the facility, then later discharges this heated water into Mount Hope Bay. Petition at 3; Response at 5; DPDD at 3 -1. Mount Hope Bay is a relatively shallow estuary that is an offshoot of Narragansett Bay, occupying its northernmost portion. *See* Petition at 3; DPDD at 2-1. Several rivers flow into it, including the Taunton, the Lee, and the Kickemuit. DPDD at 2 -1. Narragansett Bay is a 146-square-mile bay bordering Rhode Island Sound. *See* Petition at 3. Mount Hope Bay is bordered by Massachusetts and Rhode Island. DPDD at 2-1.

Under BPS's current permit, the maximum flow limit (i.e., the maximum flow that can be put through the plant) is 1,452.5 MGD. DPDD at 3-3. The permit, however, does have some monthly and seasonal flow and thermal discharge restrictions due to a series of negotiations that occurred between 1996 and 1997 between EPA, the Massachusetts Department of Environmental Protection ("MA DEP"), the permittee, and several environmental organizations. *Id.* at 3-4.These restrictions are codified in a 1997 Memorandum of Agreement. *Id.* at 4. Currently, BPS withdraws close to one billion gallons of cooling water a day from Mount Hope Bay and its tributaries and discharges approximately forty -two trillion British thermal units ("tBTU") into the Bay per year at a maximum discharge temperat ure of 95°F. DPDD at 6-14, 7-125. This essentially means that a volume of water equivalent to the entire volume of Mount Hope Bay is cycled through the plant seven times a year. *Id.* at 7-125.

Petitioner submitted an NPDES renewal permit application on Ja nuary 15, 1998, six months prior to the existing permit's expiration date.[17] DPDD at 6-1. The application did not contain a variance request un der section 316(a). *Id.* Three-and-a-half years later, in May of 2001, Petitioner submitted a request for a CWA section 316(a) variance as well as a partial demonstration in support of the variance. *Id.* at 6 -2;*see also* A.R. 9 (USGen New England, Inc., *Variance Request Application and Partial Demonstration Under the Clean Water Act, Section 316(a) and (b)* (May 24, 2001)) [hereinafter *Partial 316(a) and (b) Demonstration*]. Several months later, on December 6, 2001, Petitioner submitted its full variance application to the Region, including an allegedly complete demonstration in support of its proposed variance. DPDD at 6 -2; *see also* A.R. 555, Ex. 62 (USGen New England, Inc., *Clean Water Act Section 316(a) and (b) Demonstration, Brayton Point Station, Permit Rene wal Application, NPDES Permit No. MA0003654* (Nov. 2001)) [hereinafter *Final 316(a) and (b) Demonstration*].

***12** On July 22, 2002, the Region issued a Draft Permit for BPS. Response at 7. As part of its development of a Dr aft Permit for BPS, the Region prepared a lengthy Determinations Document containing the Region's analysis on a number of issues surrounding the Draft Permit's issuance, which it issued the same day as the Draft Permit. *Id. See generally* DPDD. In the Determinations Document, the Region explained that it first derived "baseline" thermal effluent limitations for BPS [18] based upon the BAT standard. *See generally id.* ch. 4. These baseline limits would have essentially required the entire station to use closed-cycle cooling, allowing an annual heat load discharge of only 0.8 tBTUs with a maximum temperature of 85 °F. *Id.* at 4-122.The Region also discusse d its consideration of Massachusetts' and Rhode Island's WQSs. *See generally id.* ch. 5. Ultimately, however, the Region concluded that Petitioner had successfully demonstrated that the applicable baseline, BAT-based effluent limitations for the control of the thermal component of the discharges from BPS were more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in Mount Hope Bay. *See id.* ch. 6. The Region also concluded, however, that Petitioner's proposed variance request did not meet the 316(a) standard because it would not assure the protection and propagation of the BIP in Mount Hope Bay. DPDD at 6-55 to 6 -57. Accordingly, the Region did not grant Petitioner's variance request, but rather, because Petitioner had demonstrated that the baseline thermal effluent limitations were more stringent than necessary to assure protection of the BIP, developed a different variance that it concluded did meet the section 316(a) varian ce standard. The Region's variance was substantially more stringent than the one Petitioner had proposed but less stringent than the BAT -based baseline thermal effluent limitations. *Id.* The variance allows a monthly discharge of 0.14 tBTUs or an annual dis charge limit of 1.7 tBTUs, with a discharge temperature limit of 95°F, and thus, in effect, requires closed-cycle cooling for the entire station.[19]*Id.* at 6-57.

In its Determinations Document, the Region also considered what cooling water intake requirements were appropriate under CWA section 316(b). *See id.* ch. 7. The Region concluded that cooling water intake system capacity limitations of 56 M GD, with an additional 6,847 million gallons allowed per year for cooling tower bypass, reflected the "best technology available for minimizing adverse environmental effects" (otherwise referred to as "BTA") under section 316(b). *Id.* at 7-180.This, too, would essentially require closed-cycle cooling for the entire station. *Id.*

***13** Upon issuance of the Draft Permit, the Region opened a 45 -day comment period. Response at 8. The comment period was extended to 75 days, until O ctober 4, 2002, apparently based on the request of Petitioner. *Id.* The Region also held two formal public hearings to receive oral comments on the Draft Permit, one in Somerset, Massachusetts, and one in Bristol, Rhode Island. *Id.* Several weeks before each of these public hearings, the Region held public informational meetings in the same cities in order to provide the public with an understanding of the Draft Permit prior to the end of the comment period. *Id.* During the comment period, the Region received 167 sets of written comments as well as oral comments from numerous individuals at the public meetings. *Id.* at 9.

Among these were both oral and written comments from Petitioner and its consultants. *See id.* at 8 -9.The Region also accepted several late submissions from Petitioner. *Id.* at 9. On October 6, 2003, the Region issued the Final Permit as well as a lengthy Response to Comments document. *Id.* The thermal discharge limits and the cooling water intake li mits imposed in the Final Permit were substantially the same as those proposed in the Draft Permit.[20] RTC at I-4.

B. *Procedural History*

On October 6, 2003, Region I issued a final permit decision renewing Petitioner's NPDES permit for BPS (NPDES Permit No. MA0003654). On November 5, 2003, pursuant to 40 C.F.R. § 124.19(a), Petitioner filed a timely petit ion for review of this NPDES permit with the Board, challenging a number of conditions of the permit limiting BPS's thermal discharges and cooling water intakes under CWA sections 316(a) and (b). *See generally* Petition. Petitioner submitted several other mo tions with its Petition, including a motion requesting that the administrative record be supplemented to include nine additional documents.[21] Motion to Supplement the Administrative Record (Nov. 5, 2003) ("Mot. to Suppl. A.R. "). A few weeks later, Petitioner filed a second motion requesting supplementation of the record with several additional documents. Second Motion to Supplement the Administrative Record (Nov. 28, 2003) ("Second Mot. to Suppl. A.R.").

On December 30, 2003, the Region filed a Response to the Petition. *See generally* Response. The Region filed several other documents with its Response, including an opposition to Petitioner's motions to supplement the record and a motion to strike. Opposition to Petitioner's First and Second Motions to Supplement the Administrative Record (Dec. 30, 2003) ("Reg. Opposition to Mots. Suppl. A.R."); Motion to Strike (Dec. 30, 2003) ("Reg. First Mot. to Strike").

***14** Between November 2003 and February 2004, following the filing of the Petition, five other entities filed motions to intervene and/or to file amicus curiae briefs in this matter: the Conservation Law Foundation ("CLF"); MA DEP; Save the Bay ("STB"); the Department of Attorney General of the State of Rhode Island ("Rhode Island"); and the Utility Water Act Group ("UWAG"). Several of them also submitted briefs addressing the substantive issues in the case. *See* Memorandum of Law in Support of CLF's Motion for Leave to Intervene and File a Brief (Nov. 25, 2003) ("CLF Br."); Amicus Brief of MA DEP in Support of EPA NPDES Permit No. MA0003654 (Dec. 29, 2003) ("MA Br. "); STB's Memorandum of Law in Support of Its Motion for Leave to File an Amicus Brief in Support o f NPDES Permit No. MA0003654 (Dec. 29, 2003) ("STB Br."); Rhode Island's Memorandum of Law in Support of its Motion for Leave to Intervene and File a Brief or in the Alternative Motion for Leave to File an Amicus Brief in Support of NPDES Permit (Dec. 30, 2003) ("R.I. Br."). In addition, CLF and Rhode Island filed objections to Petitioner's requests to supplement the administrative record. *See* CLF's Objection to Petitioner's Motions to Supplement the Administrative Record and Supporting Brief (Dec. 29, 2003) ("CLF Objection to Suppl. A.R. "); State of Rhode Island's Objection to Petitioner's Motions to Supplement the Administrative Record and Accompanying Memorandum of Law (Dec. 30, 2003) ("R.I. Objection to Suppl. A.R.").

On February 19, 2004, the Board granted review of the Petition under 40 C.F.R. § 124.19(c).*See* Order Granting Review at 5. In that order, the Board also granted amicus status to the five entities listed above that had submitted requests to participate in the proceedings.[22]*Id.* at 6-7.The Board also stated that other interested persons, in addition to the five entities that had already requested involvement, would also be able to participate by filing amicus briefs. *Id.; see also* 40 C.F.R. § 124.19(c) . Following the issuance of the Board's Order Granting Review, the Taunton River Watershed Alliance, Inc. ("TRWA"), and the Kickemuit River Council ("KRC") each submitted requests to participate as amici in this matter. TRWA Motion for Leave to File Brief (May 3, 2004) ("TRWA Br.");[23] KRC Motion for Leave to File an Amicus Brief in Support of the NPDES Permit No. MA0003654 (May 24, 2004); *see also* KRC's Memorandum of Law in Support of Its Motion for Leave to File an

Amicus Brief in Support of the NPDES Permit No. MA0003654 (May 24, 2004) ("KRC Br."). The Board granted both motions. *See* Order (May 4, 2004); Order (May 27, 2004).[24]

In the Order Granting Review, the Board also established a briefing schedule and stated that such briefing would be bifurcated. Order Granting Review at 4. The participants were instructed to focus their first sets of briefs on the issue of whether Petitioner's motion for an evidentiary hearing should be granted. *Id.* at 9. Briefs on all other issues were due from Petitioner and any amicus in support of Petitioner by June 7, 2004. *Id.* Responses from the other participants were due by June 28, 2004. *Id.* at 10.Petitioner's reply was due on or before July 12, 2004. *Id.* The Board subsequently extended the last two deadlines by approximately ten days in response to a motion from the Region. *See* Order Granting Extension of Time and Denying Enlargement of Page Limits (June 18, 2004).

***15** In response to the Order Granting Review, the Board has received the following briefs on issues other than the evidentiary hearing question: (1) Petitioner's Brief in Support of [Its] Appeal of the NPDES Permit for Brayton Point Station (June 7, 2004) ("DEBP Suppl. Br. "); (2) UWAG's Amicus Curiae Brief in Support of [Dominion's] Petition for Review (June 7, 2004) ("UWAG Br."); (3) Supplemental Amicus Brief of MA DEP in Response to Briefs Filed by [Dominion] and UWAG in Support of [Dominion's] Appeal of [] EPA NPDES Permit No. MA003654 (June 29, 2004) ("MA Suppl. Br. "); (4) EPA Region I's Brief in Response to Briefs of [Dominion] and UWAG in Support of [Dominion's] NPDES Permit Appeal (July 9, 2004) ("Reg. Suppl. Resp."); (5) CLF's Amicus Curiae Brief in Response to Briefs Filed by [Dominion] and UWAG in Support of [Dominion's] Appeal of EPA NPDES Permit No. MA -003654 (July 9, 2003) ("CLF Suppl. Br."); (6) Rhode Island's Brief in Opposition to Arguments Raised by [Dominion] in Support of Its Appeal (July 13, 2004) ("R.I. Suppl. Br. ");[25] (7) STB's Supplemental Amicus Brief in Support of NPDES Permit No. MA0003654 and in Response to Briefs Filed by [Dominion] and UWAG (July 13, 2004) ("STB Suppl. Br.");[26] and (8) Petitioner's Reply Brief in Support of [Its] Appeal of the NPDES Permit for Brayton Point Station (July 23, 2004) ("DEBP Reply").

Additionally, around the same time they filed their supplemental briefs, the Region and Rhode Island both filed motions to strike portions of Petitioner's supplemental briefs. Region's Second Motion to Strike (July 14, 2004) ("Reg. Second Mot. to Strike"); State of Rhode Island's Motion to Strike Portions of Petitioner's Brief That Rely on Evidence Outside the Official Administrative Record (July 13, 2004) ("R.I. Mot. to Strike "). Petitioner and UWAG subsequently responded in opposition to these motions. Dominion's Opposition to Region I's Second Motion to Strike (July 23, 2004) ("DEBP's Opposition to Second Mot. to Strike"); UWAG's Opposition to Region I's Second Motion to Strike (July 28, 2004) ("UWAG's Opposition to Second Mot. to Strike").

On July 23, 2004, the Board issued two orders: one denying Petitioner's Motion for Evidentiary Hearing, the other granting Petitioner's Motion for Oral Argument. *See In re Dominion Energy Brayton Point, LLC (formerly USGen New England), Brayton Point Station*, Order Denying Motion for Evidentiary Hearing, NPDES Appeal No. 03 -12 (EAB July 23, 2004), 11 E.A.D. _; Order Scheduling Oral Argument (July 23, 2004). Oral argument was held on September 9, 2004, in which seven of the participants in this matter presented argument .[27]*See* Oral Arg. Tr. At this time, the following requests, petitions, and/or motions are still pending before the Board in this case: the Petition and all associated briefs, Petitioner's two motions to supplement the record, several participants' oppositions to the motions to supplement the record, motions to strike, and oppositions to the motions to strike.

IV. *STANDARD OF REVIEW*

***16** Part 124 contains the procedures for the Agency's processing of permit applications, including NPDES permits, and appeals of those permitting decisions. *See generally* 40 C.F.R. pt. 124. Under the current part 124 regulations, a person seeking an NPDES permit from the Agency must first submit an application to EPA. *Id.* § 124.3(a). Once an application is found by the Agency to be complete, a draft permit is issued by the appropriate Regional Administrator, *id.* § 124.6(c), public notice of the draft permit is given, *id.* § 124.10(a)(ii), and a public comment period is provided, *id.* § 124.10(b). If there is a significant degree of public interest in the draft permit, the Region must hold a public hearing. *Id.* § 124.12(a). Following the close of the comment period, the Region responds to comments, *id.* § 124.17(a), and issues a final permit decision, *id.* § 124.15(a). The final permit decision must be based upon the "administrative record" for the final permit decision, which is defined by regulation, *id.* § 124.18(a), and must contain the administrative record for the draft permit as well as a number of

other items, including all comments received during the comment period, any written materials submitted at a hearing (if one is conducted), and a response to comments document. *Id.* § 124.18(b)(1)-(7). Within thirty days of the issuance of the final permit decision, any person who filed comments on the draft permit or who participated in the public hearings may appeal the Region's final permit decision to the Board. *Id.* § 124.19(a). Such an appeal is based on a "record review" of the permit decision. Accordingly, the Board's disposition of an appeal ordinarily takes one of two forms: either it sustains the permit decision as rationally based on the record before the permit issuer or it remands the permit based on the determination that the record is inadequate or that the permit issuer otherwise erred in issuing the permit.[28]

The Board's standard of review where we are reviewing a permit under part 124 is whether the permit issuer based the permit on a clearly erroneous finding of fact or conclusion of law. 40 C.F.R. § 124.19(a); *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 144 (EAB 1994). The Board, in its discretion, may also evaluate conditions of the permit that are based on the permit issuer's "exercise of discretion or an important policy consideration." 40 C.F.R. § 124.19(a)(2). As a procedural matter, in order to preserve an issue for appeal before the Board, a petitioner must first demonstrate that all reasonably ascertainable issues and all reasonably available arguments supporting its position were raised by the close of the comment period as required by the NPDES procedural regulations.[29] 40 C.F.R. §§ 124.13 (a), .19(a); *see In re Westborough*, 10 E.A.D. 297, 304 (EAB 2002); *In re City of Moscow*, 10 E.A.D. 135, 141 (EAB 2001); *In re New England Plating Co.*, 9 E.A.D. 726, 731 (EAB 2001).

***17** On appeal, it is not sufficient merely to repeat objections made during the comment period; rather, a petitioner must also demonstrate why the permit issuer's response to those objections (i.e., the permit issuer's basis for its decision) is clearly erroneous. 40 C.F.R. § 124.19(a); *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 744 (EAB 2001); *In re LCP Chems.*, 4 E.A.D. 661, 664 (EAB 1993); *see also In re Peabody W. Coal Co.*, CAA Appeal No. 04-01, slip op. at 16 (EAB Feb. 18, 2005), 12 E.A.D. ___ (explaining that "the petitioner may not simply reiterate comments made during the public comment period, but must substantively confront the permit issuer's subsequent explanations"); *In re Carlota Copper Co.*, NPDES Appeal No. 00-23, slip op. at 22 (EAB Sept. 30, 2004); *In re Teck Cominco Alaska Inc.*, NPDES Appeal No. 03-09, slip op. at 22 (EAB June 15, 2004). Such demonstration must be specific and substantiated. *In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 708 (EAB 2002); *Westborough*, 10 E.A.D. at 305; *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 404 (EAB 1997); *In re Hadson Power 14 -Buena Vista*, 4 E.A.D. 258, 294 n.54 (EAB 1992). Furthermore, "in order for an issue to be reviewed on appeal it must have been raised with a reasonable degree of specificity and clarity during the comment period." *Westborough*, 10 E.A.D. at 304; *accord New England Plating*, 9 E.A.D. at 730; *Steel Dynamics*, 9 E.A.D. 230. Such a requirement ensures that "while the permit issuer will be held accountable for a full and meaningful response to comments, it need not guess the meaning behind imprecise comments." *Westborough*, 10 E.A.D. at 304; *accord Steel Dynamics*, 9 E.A.D. 230.

Moreover, when a petitioner seeks review of a permit based on issues that are fundamentally technical in nature, the Board assigns a particularly heavy burden to the petitioner. *Peabody*, slip op. at 16-17, 12 E.A.D. at ___; *see Carlota*, slip op. at 22, 11 E.A.D. at ___ (explaining that "a petitioner seeking review of issues that are technical in nature bears a heavy burden because the Board generally defers to the Region on questions of technical judgment"); *Teck Cominco*, slip op. at 23, 11 E.A.D. at ___ (same); *City of Moscow*, 10 E.A.D. at 142 (same). As we explained in *Peabody*, "this demanding standard serves an important function within the framework of the Agency's administrative process; it ensures that the locus of responsibility for important technical decisionmaking rests primarily with the permitting authority, which has the relevant specialized expertise and experience." *Peabody*, slip op. at 16, 12 E.A.D. at ___; *see also In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), *rev. denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). Thus, "when issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter. In cases where the views of the Region and the petitioner indicate bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the Region." *NE Hub*, 7 E.A.D. at 567; *accord Peabody*, slip op. at 16-17, 12 E.A.D. at ___; *see also In re Envotech, L.P.*, 6 E.A.D. 260, 284 (EAB 1996) ("absent compelling circumstances, the Board will defer to a Region's determination of issues that depend heavily upon the Region's technical expertise and experience"); *In re Gen. Elec. Co.*, 4 E.A.D. 358, 375 (EAB 1992) (same). Accordingly, when the Board is presented with conflicting expert opinions over technical issues, "we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record." *In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *accord Moscow*,

10 E.A.D. at 142; *NE Hub* , 7 E.A.D. at 568. The Region's ratio nale for its conclusions, however, must be adequately explained and supported in the record. *Moscow*, 10 E.A.D. at 142; *NE Hub*, 7 E.A.D. at 568 (citing cases the Board remanded where a Region's decision on a technical issue was illogical or inadequately supported by the record); *see also, e.g., Gov't of D.C.*, 10 E.A.D. at 342-43 ("Without an articulation by the permit writer of his [or her] analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirement of rationality.").[30]

***18** With these standards in mind, we analyze the issues raised by Petitioner.

V. *THE ADMINISTRATIVE RECORD*

Petitioner raises several challenges pertaining to the administrative record for this permit proceeding. As we indicated abov e in Part III.B, Petitioner submitted two motions to supplement the administrative record, to which several participants subsequently filed various motions in response, including motions to strike, motions opposing supplementation, and oppositions to the motions to strike. In addition, Dominion challenges in the Petition several aspects of the administrative record. *See* Petition at 20-24; *see also id.* at 14-20.Because Petitioner relies on a number of the documents it seeks to have added to the administrative record in some of the arguments it makes in its Petition and supplemental briefs, we consider the motions to supplement the record prior to addressing the more substantive issues raised in the Petition. Those documents that we decline to add to the administrative record are considered stricken from the record on appeal.[31] We also deal with the other administrative record-specific issues Petitioner raises in the Petition in Part V.B of this decision.

A. *Motions to Supplement the Record*

1. *Materials Requested to Be Included in the Administrative Record*

Petitioner submitted its first motion to supplement the record at the same time that it filed its Petition. In that motion, Petitioner requested inclusion of the following nine items, some of which were submitted with the Petition as attachments:[32]
Item 1: A December 17, 2002 letter from the permittee to the Region with accompanying data and other information;

Item 2: The transcript and/or tapes of public meetings held in Massachusetts and Rhode Island on August 5 and 6, 2002;

Item 3: Petitioner's response to a letter from Rhode Island Department of Environmental Management ("RI DEM") biologist Mark Gibson, which included a cover letter from Petitioner's attorneys as well as several attachments, submitted to the Region on October 6, 2003, Petition attach. C;

Item 4: A videotape on cormorant predation submitted on behalf of the permittee on October 4, 2002;

Item 5: An MA DEP document providing responses to selected comments on the Draft Permit, marked "Draft May 29, 2003," and submitted to the Region with a cover e-mail on June 6, 2003, Petition attach. D;

Item 6: An MA DEP e -mail summarizing a conversat ion between MA DEP and the Region regarding the interpretation of Massachusetts' WQSs, Petition attach. G (E -mail from Richard Lehan, Office of General Counsel, MA DEP, to Glenn Haas & Daniel d'Hedouville, MA DEP (undated)) [hereinafter "Lehan e-mail"];[33]

Item 7: "A series of communications between Region I and MA DEP regarding the text of the [MA] water quality certification";[34]

Item 8: A series of e-mail messages between the regional attorney and a regional engineer allegedly concerning "the high cost of locating cooling towers at the southern end of [BPS's] property," which is apparently Attachment H to the Petition;[35] and

***19** Item 9: An MA DEP e -mail reporting on a conversation between MA DEP and the Region about the impact of this permit on other permits in Massachusetts, Petition attach. B (E -mail from Philip Weinberg, MA DEP, to Lauren Liss, et al., MA DEP (undated)) [hereinafter "Weinberg e-mail"].[36]

First Mot. to Suppl. A.R. at 5 -6. Petitioner argues that these documents were "erroneously omitted from the record and are necessary to allow for a meaningful review" of the permit decision. *Id.* at 1. Petitioner claims that it had previously informed the Region of the alleged deficiencies. *Id.*

In its second motion to supplement the record, Petitioner requests inclusion of a series of documents related to a December 2001 study performed by Mark Gibson, a biologist with RI DEM. Second Mot. to Suppl. A.R. at 1. Petitioner argues that the Region may not "'sanitize' the record by excluding this report and other documents related to the evolution of Mr. Gibson's analyses of [BPS's] impacts on Mount Hope Bay." *Id.* at 2. Although Petitioner did not explicitly list the documents it wished to be included as part of the administrative record, it did attach five documents as exhibits to its motion. We read its second motion to be requesting inclusion of the materials attached as exhibits to Petitioner's motion. Four of these attachments were not included in Petitioner's first motion to supplement. These are:
Item 10: A December 2001 study by Mark Gibson, apparently in draft, entitled *Winter Flounder Abundance Near Brayton Point Station, Mt. Hope Bay Revisited: Separating Local from Regional Impacts using Long Term Abundance Data*, Second Mot. to Suppl. A.R., Ex. A [hereinafter Gibson 2001 draft study];[37]

Item 11: A March 8, 2002 RI DEM Inter-Office Memo from Angelo Liberti to Mark Gibson discussing some language in the December 2001 study and a related e-mail from Angelo Liberti, RI DEM, to Phil Colarusso, EPA Region 1, and Dave Johnston, MA DEP, sending a copy of the Memo, Second Mot. to Suppl. A.R., Ex. B;

Item 12: A March 2002 study by Mark Gibson of the same title as Item 10 that is apparently a revised, final version of that study, Second Mot. to Suppl. A.R., Ex. C [hereinafter Gibson 2002 final study];

Item 13: A letter from the Region to Petitioner's attorneys dated November 6, 2003, stating that Petitioner's October 6, 2003 submissions were not placed in the record because they were received after the Final Permit was issued earlier that same morning, Second Mot. to Suppl. A.R., Ex. D.

Second Mot. to Suppl. A.R., Exs. A-D.[38]

In its first motion requesting supplementation of the record, Petitioner indicates that there may be other as yet unidentified documents that should also be included in the record (besides Item 7, which, as we explained above, was itself a vaguely identified set of materials). First Mot. to Suppl. A.R. at 6. In its second motion as well as in its supplemental and reply briefs, Petitioner requests addition of several more documents. We read these later requests as being for the complete set of unidentified documents mentioned in the first motion.

***20** The Region, Rhode Island, and CLF filed motions opposing supplementation of the record. We discuss the arguments raised in these motions below, where relevant, during our consideration of the appropriateness of supplementing the record with each item. The Region and Rhode Island also filed motions to strike. In its Second Motion to Strike, the Region lists a number of documents that Petitioner and UWAG have mentioned, relied upon, and/or attached to their briefs, which the Region believes should be stricken. Reg. Second Mot. to Strike at 5 -6. One of these documents was not specifically included in Petitioner's motions to supplement the record and therefore is not listed above.[39] It is:

> Item 14: A June 1, 2004 Memo written by Lawler, Matusky & Skelly Engineers ("LMS"), one of Petitioner's consultants, regarding new trawl efficiency calculations, DEBP Suppl. Br., Ex. L; *see also* DEBP Suppl. Br. at 28 n.60 (requesting inclusion of the document in the record).

Reg. Second Mot. to Strike at 5; *see also* Reg. Suppl. Resp. at 28 n.46. In its motion, the Region also challenges Petitioner's and UWAG's arguments related to EPA's new Phase II regulations promulgated under section 316(b) and all "extra-record" documents submitted in association with those arguments. Reg. Second Mot. to Strike at 1 -5; *see also* RI Mot. to Strike at 1-2. Petitioner and UWAG respond to these latter arguments in their oppositions to the motions to strike. We consider the

participants' arguments concerning the Phase II rulemaking and the "extra-record" materials related to that argument below in our discussion of the relevance of the Phase II rulemaking to this permit proceeding. *See infra* Part VI.B.1.b.iv.

Before addressing each of the items at issue, we first summarize the Agency regulations setting forth the administrative record requirements in a permit proceeding.

2. *Regulations Governing the Administrative Record*

The part 124 regulations contain several provisions governing administrative record requirements for EPA-issued NPDES permits and include lists of required record materials for both draft and final permits as well as guidelines on timing. *E.g.*, 40 C.F.R. §§ 124.9, .17(b), 124.18. The regulations require the following items to be in the administrative record for a draft permit such as the NPDES renewal permit for BPS: (1) the permit application and any supporting data submitted by the applicant; (2) the draft permit; (3) a fact sheet; (4) all the documents cited in the fact sheet; and (5) other documents contained in the supporting file for the draft permit. *Id.* § 124.9(b)(1)-(5). These items must remain in the administrative record for the final permit. *Id.* § 124.18(b). In addition, the administrative record for a final permit must include: (1) all comments received during the public comment period; (2) the tape or transcript of any "public hearings" held under section 124.12; (3) any written materials submitted at such public hearing; (4) the response to comments document required to be prepared pursuant to section 124.17 and any documents cited in the response to comments; (5) other documents contained in the supporting file for the permit; and (6) the final permit. *Id.* § 124.18(b);*see also id.* § 124.17(b). These materials "should be added to the record as soon as possible after their receipt or publication by the Agency."*Id.* § 124.18(b). The regulations also provide a timeline for the closing of the administrative record, stating that "[t]he record shall be complete on the date the final permit is issued."*Id.* § 124.18(c);*accord In re Weber #4-8*, UIC Appeal No. 03-01, slip op. at 5 (EAB Dec. 11, 2003), 11 E.A.D. ___.

***21** The part 124 regulations do not contain any provisions specifying if and when the administrative record may be supplemented on appeal. *See*40 C.F.R. pt. 124; *see also* CLF Memo Objecting to Suppl. A.R. at 3. Nevertheless, as the Agency's final decisionmaker under part 124, we have on occasion considered requests to supplement the administrative record as well as other related motions. *E.g., In re Chevron Chem. Co.*, 4 E.A.D. 18, 20-21 (EAB 1992); *see also In re Kendall New Century Dev.*, PSD Appeal No. 03-01, slip op. at 20 (EAB Apr. 29, 2003), 11 E.A.D. ___ (declining to consider testimony submitted with the petition that had been part of the administrative record in another permit proceeding); *In re Three Mountain Power, L.L.C.*, 10 E.A.D. 39, 46 n.8 (EAB 2001) (denying a motion to strike portions of a brief and an objection to the introduction of new evidence); *In re Gen. Motors Corp.*, 5 E.A.D. 400, 405 (EAB 1994) (declining to consider data developed after the final permit decision); *cf. In re Port Auth. of N.Y. & N.J.*, 10 E.A.D. 61, 97 (EAB 2001) (considering motion to supplement the record with additional documents in the context of a CERCLA petition). We have also observed that "the [administrative] appellate review process affords [petitioner] the opportunity to question the validity of the material in the administrative record upon which the Agency relies in issuing a permit. "*In re Caribe Gen. Elec. Prods., Inc.*, 8 E.A.D. 696, 705 n.19 (EAB 2000), *appeal dismissed per. stip.*, No. 00-1580 (1st Cir. 2001); *accord In re Am. Soda, L.L.P.*, 9 E.A.D. 280, 299 (EAB 2000); *see In re Ash Grove Cement Co.*, 7 E.A.D. 387, 431 (EAB 1997); *In re Amoco Oil Co.*, 4 E.A.D. 954, 980 (EAB 1993). Such inquiries may include the consideration of whether certain documents that should be included in the administrative record are missing.

3. *Analysis*

a. *Items Already in the Record (Items 1, 4, and 12)*

In its opposition to Petitioner's two motions, the Region avers that three of the documents - the December 17, 2002 letter, the cormorant videotape, and the Gibson 2002 final study (Items 1, 4, and 12) - have in fact been included in the administrative record. Reg. Opposition to Mots. to Suppl. A.R. at 5, 19. The Region therefore opposes Petitioner's motion as to these records on this basis alone. [40] Petitioner, in its subsequent response, has not challenged the Region's assertion that these materials are in fact already in the administrative record. *See* DEBP's Opposition to Second Mot. to Strike at 10-12.[41] Moreover, these items appear in the Certified Index to the Administrative Record. Certified Index, A.R. 658 (Gibson 2002 final study), 3263 (Petitioner's comments on permit, which include the videotape), 3373 (December 17, 2002 letter).

Accordingly, we find that these materials are indeed in the administrative record and therefore deny Petitioner's request to add them to the record.

b. *Items Not in Existence (Item 2)*

***22** The Region explains that it did not create a transcript or tape of the meetings held on August 5 and 6, 2002, and therefore Item 2 does not exist. Reg. Opposition to Mots. to Suppl. A.R. at 6 -7. The Region maintains that, unlike the formal public hearings held on August 26 and 27 of that year that were transcribed pursuant to 40 C.F.R. § 124.12(d), these meetings were "informal public informational meetings " at which it merely explained the Draft Permit and the Region's rationale for the conditions it imposed. [42]*Id.* at 6. Thus, the Region argues, there was no requirement to prepare tapes or transcripts of the meetings and none were created. *Id.* at 7. Neither Petitioner nor any other participant has responded to the Region's position on this issue. *See* DEBP's Opposition to Second Mot. to Strike at 10 -12; *see also supra* note 41. In light of the fact that Item 2 does not exist, we deny Petitioner's request to add it to the record.

c. *Postdecisional Items (Items 3, 13, and 14)*

With respect to the October 6, 2003 letter from Petitioner's attorneys and the associated at tachments (Item 3), the Region claims that it was delivered to the Region several hours *after* the Final Permit was issued and therefore could not have been considered by the Region in the development of the permit. Reg. Opposition to Mots. to Suppl. A.R. a t 7. Thus, the Region argues, the document is not properly part of the record. *Id.; see also* CLF Memo Objecting to Suppl. A.R. at 3 (noting that Petitioner is attempting to supplement the record with "information the Petitioner gathered post comment period "). In its Opposition to the Region's Second Motion to Strike, Petitioner argues that the Region's acceptance of a Mark Gibson September 24, 2003 letter into the "already-closed record"[43] but refusal of Petitioner's October 6, 2003 submissions creates an imbalance in the administrative record. *See* DEBP's Opposition to Second Mot. to Strike at 11. Petitioner's argument is unavailing.

As we expla ined above, under the Agency's regulations, the administrative record in an NPDES permit proceeding is considered complete on the date the final permit is issued. *Id.* § 124.18(c). We interpret this to mean that the record is closed at the time of permit is suance and that documents submitted subsequent to permit issuance cannot be considered part of the administrative record. *In re Peabody W. Coal Co.* , CAA Appeal No. 04 -01, slip op. at 25 n.42 (EAB Feb. 18, 2005), 12 E.A.D. ___ (explaining that "because [petitioner] provided Region IX with this document after the Permit had been issued, it was not part of the administrative record for the Region's permit decision "); *In re Gen. Motors Corp.* , 5 E.A.D. 400, 40 5 (EAB 1994) (declining to consider post-permit information); *see also In re BP Cherry Point*, PSD Appeal No. 05-01, slip op. at 15 n.27 (EAB June 21, 2005), 12 E.A.D. ___ (allowing new substantive issues to be raised after permit issuance "would run contrary to principle that administrative record for a permitting decision is complete at the time of permit issuance "); *In re Weber #4-8*, UIC Appeal No. 03-01, slip op. at 4 n.2 (EAB Dec. 11, 2003), 11 E.A.D. ___ (stating that, with respect to the Region's response to a commenter's second and late -arriving comment letter, "the Region's response is not officially part of the administrative record as it postdates permit issuance").[44]

***23** This is consistent with general administrative law principles. In that arena, many courts have explained that the complete or official administrative r ecord for an agency decision includes all documents, materials, and information that the agency relied on directly or indirectly in making its decision. *E.g., Bar MK Ranches v. Yuetter* , 994 F.2d 735, 739 (1 0th Cir. 1993); *Thompson v. U.S. Dep't of Labor* , 885 F.2d 551, 555 (9th Cir. 1989) . Thus courts have been reluctant to include in an administrative record materials that were not actually before the a gency when it made its decision. *Thompson*, 885 F.2d at 556; *Walter O. Boswell Mem'l Hosp. v. Heckler* , 749 F.2d 788, 792 (D.C. Cir. 1984) ("To review more than the information before the [agency] at the time [the] decision was made risks * * * requiring administrators to be prescient or allowing them to take advantage of post hoc rationalizations. "); *Am. Petroleum Inst. v. Costle* , 609 F.2d 20, 23 (D.C. Cir. 1979) ; *United States v. Amtreco, Inc.* , 806 F. Supp. 1004, 1007 (M.D. Ga. 1992) ("Post-decisional information is not relevant to a judicial review of an agency decision.").

As explained by the Region, the Final Permit was issued on the morning of October 6, 2003, prior to the arrival of the documents at issue. Thus, there is no possible way in which those late -arriving documents could have been con sidered in

developing the BPS permit since it had already been issued at the time of their arrival. While it may be true that the Region, in its discretion, continued accepting materials into the record for some time after the official comment period had ended, including the Mark Gibson letter, the critical cutoff here is final permit issuance. [45] Consequently, the key distinction between the two documents here - the Gibson letter and Petitioner's letter - is the time of their submission and not their content. Petitioner's submissions arrived after the decision, and the Region appropriately did not include them in the administrative record for that decision. For these same reasons, we decline to supplement the record with these postdecisional documents, and the letter and all related attachments are treated as stricken from the record in this permit appeal.

Two other items, which were also created after the decision was issued, clearly fall within this category of documents: the June 1, 2004 LMS Memo regarding trawl efficiency calculations (Item 14) and the Region's November 6, 2003 letter to Petitioner's attorneys regarding Petitioner's October 6, 2003 submission (Item 13). Both were created after the Region issued the Final Permit on October 6, 2003, are obviously postdecisional, and are thus not considered as part of the administrative record for the final permit decision. [46] *See Weber #4 -8*, slip op. at 4 n.2, 11 E.A.D. at ___; *see also Amtreco*, 806 F. Supp. at 1007 (holding that documents created after decision is made should not be part of the record). We therefore decline to supplement the record with these documents, and they should be stricken from the record in this permit appeal.

d. *Internal Documents of Other Agencies (Items 6 and 9)*

***24** The Region claims that the Lehan e-mail and the Weinberg e-mail - Items 6 and 9 - are internal MA DEP documents that it had never seen prior to receiving the Petition. Reg. Opposition to Mots. to Suppl. A.R. at 9. Because the documents were not in its possession, argues the Region, they could not have been considered or relied upon in developing the permit and hence should not be part of the record. *Id.* In response, Petitioner contends that the Weinberg e-mail summarizes a meeting between the two agencies and is therefore the type of document that is required to be placed in the record by the Agency's own *NPDES Permit Writer's Manual*. DEBP Opposition to Mot. to Strike at 11 (citing Office of Water, U.S. EPA, Pub. No. 833-B-96-003, *U.S. EPA NPDES Permit Writers' Manual* (1996) (hereinafter *NPDES Manual*)); *see also* Mot. to Suppl. A.R. at 5.

Although created before the date the administrative record was closed, the Lehan e-mail and the Weinberg e-mail (Items 6 and 9) were not received by the Region prior to that date. The Region therefore could not have and did not consider these documents in making its permit decision. Consequently, these items are similar in nature to those documents created after the Agency makes its decision in that the Agency could not have considered them in its decision, and thus our analysis regarding postdecisional documents equally applies to them. *See supra* Part V.A.3.c; *see also Envtl. Def. Fund, Inc. v. Blum*, 458 F. Supp. 650, 661 n.4 (D.D.C. 1978) (rejecting contention that arguably relevant documents not in an agency's file but potentially available from a third party's files should be considered as part of the record); *Amtreco*, 806 F. Supp. at 1007 (holding that documents not available to the agency when it made its decision could not have been considered and therefore should not be added to the record).

Furthermore, these two e-mails do not fall within the types of administrative record documents contemplated by the Agency's *NPDES Manual* as Petitioner argues. The *NPDES Manual*, which is intended as a guidance document, [47] states that "[t]he administrative record should include all meeting reports and correspondence with the applicant and correspondence with other regulatory agency personnel. In addition, trip reports and telephone memos should be included in the record." *NPDES Manual* at 194. While it is true that these documents memorialize telephone conversations, they are MA DEP's telephone memos, not those of the Region. Thus, they are not the "telephone memos" referred to in the Agency's *NPDES Manual*. We therefore decline to supplement the record with these documents, and they should be stricken from the record in this permit appeal.[48]

e. *Items Superseded Before Draft Permit Issuance (Items 10 and 11)*

***25** The Region claims that the Gibson 2001 draft study (Item 10), which Petitioner requests be added to the administrative record in its second motion to supplement, was written before the Draft Permit was issued and was superseded by a final report, which was also drafted prior to the Draft Permit. Reg. Opposition to Mots. to Suppl. A.R. at 20. According to the Region, the Gibson 2002 *final* study was submitted to the Region by RI DEM and placed into the administrative record. *Id.*

According to the Region, there is no legal requirement that a draft document be included in the administrative record, especially when the draft study is replaced by a later version of the report that is included in the record. *Id.* at 19-20.In addition, the Region asserts that related Item 11 - the March 8, 2002 internal RI DEM memorandum discussing the draft 2001 Gibson study and an e-mail sending a courtesy copy of the memorandum to the Region and Massachusetts - should not be included in the record for reasons similar to those regarding the study itself.[49] Reg. Opposition to Mot. to Suppl. A.R. at 19-20. The Region further argues that "[i]nternal deliberation[] by the state concerning its decisions or scientific analyses that are not submitted as formal comments" need not be included in the record, "especially when the state's final decision or analyses are included."*Id.*

In its Opposition to the Region's motion, Petitioner does not respond to the Region's arguments, merely claiming that the draft 2001 Gibson study is on point and was circulated among the interested parties to the BPS permit proceeding. DEBP Opposition to Mot. to Strike at 10. Petitioner also does not respond to the arguments regarding Item 11.

Based on the information before us regarding the Gibson 2001 draft study and the March 8, 2002 memorandum, we do not find that they fall within any of the documents and materials required to be placed in the administrative record. *See supra*Part V.A.2. Petitioner has not claimed that the Gibson 2001 draft study or the RI DEM memorandum was submitted into the record during the comment period or at the public hearings. *See*40 C.F.R. § 124.18(b)(1)(3). Petitioner likewise has not indicated that the Region cited to either document in the response to comments. *See id.* §§ 124.17(b), .18(b)(4). Thus, the only provision that could apply is if the documents are considered part of the "supporting file for the permit." *Id.* § 124.18(b)(6).

The draft study was released in December 2001 and the final version was released in March 2002. Both, therefore, were created prior to the BPS permit's comment period that began to run on July 22, 2002 (i.e., the date the Draft Permit was issued). It is not unexpected or inappropriate that the Region placed the final version, rather than an earlier draft version, into the record.[50] This is especially true in light of the fact that the Region cited to the final study in the Determinations Document and the Response to Comments Document. *See, e.g.*, DPDD at 6-28 & fig. 6.3-1; RTC at VII-31. In fact, as a document cited in the Response to Comments document, the final report is required to be included in the record pursuant to the part 124 regulations. 40 C.F.R. § 124.17(b),.18(b)(4). When a final version of a report, study, or other document is issued prior to a draft permit's issuance and submitted to the administrative record for the permit, the permit issuer need not place all previous drafts and/or iterations of that report or study, or other documents discussing or related to the draft, in the administrative record. Petitioner does not cite to any authority suggesting otherwise. Such a practice would create records that would be veritable quagmires.[51] The only time that inclusion of a draft report or study into the administrative record for a permit makes sense (and, in fact, may be required) is in the situation where a relevant draft report or study is issued before or during the comment period and is submitted as a comment on the draft permit or is relied upon by the permit issuer.[52]

***26** Consequently, Petitioner has not demonstrated that the Gibson 2001 draft study or the RI DEM internal memorandum discussing the draft study falls within those materials required to be in the administrative record under 40 C.F.R. § 124.18(b)(1)-(7). Accordingly, we decline to add these documents (Items 10 and 11) to the administrative record, and they should be stricken from the record in this permit appeal.

f. *Internal EPA Documents (Item 8)*

Item 8 is a series of e-mail messages between a regional attorney (Mark Stein) and a Regional engineer (Damien Houlihan) containing a discussion of certain issues raised by the permittee in a meeting. Petition attach. H. It primarily consists of the two staff members' preliminary thoughts and opinions about the location of the cooling towers.[53] *See id.* Petitioner states that this communication was from the Region to MA DEP. First Mot. to Suppl. A.R. at 6. The e-mail history, however, shows that the original message was from Mark Stein to six regional staff members, four individuals at two of the consulting firms that worked on the BPS permit on behalf of the Region, and one individual (David Johnston) who works for Massachusetts (presumably MA DEP). Petition attach. H at 3. The rest of the series of e-mails are between Damien Houlihan and Mark Stein, beginning with Mr. Houlihan's response to Mr. Stein's e-mail. *See id.* at 2-4.Although the other aforementioned individuals listed on the first e-mail were courtesy copied on the follow-up e-mails, they did not participate in this e-mail conversation. *Id.* at 2. We conclude, therefore, that this series of e-mail messages is essentially an internal agency discussion

between two regional staff members, despite the fact that the e -mails were courtesy copied to one person at MA DEP as well as several of the region's contractors (who, for purposes of this discussion, should be considered as regional personnel).

In its opposition brief, the Region argues that "[d]ocumentation of the internal deliberations of the agency, as opposed to the stated basis of its decision, should be immaterial to a reviewing tribunal and, therefore, EPA properly excludes these materials from the administrative records for its decisions. "Reg. Opposition to Mots. to Suppl. A.R. at 3. The Region cites several cases for this statement. *See id.*Petitioner did not respond to the Region's arguments. *See generally* DEBP Opposition to Second Mot. to Strike.

Although to date we have not addressed this specific issue in the context of a permit decision, several federal courts have considered whether to require inclusion of predecisional "internal agency documents" as part of the administrative record, and all have declined to do so. *E.g., San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n*, 751 F.2d 1287, 1324-26 (D.C. Cir. 1984); *Ad Hoc Metals Coalition v. Whitman*, 227 F. Supp. 2d 134, 142 -43 (D.D.C. 2002); *Ohio Valley Envtl. Coalition v. Whitman*, No. Civ. A. 3:02 -0059, 2003 WL 43377, at *6 (S.D. W. Va. Jan. 6, 2003). These courts have provided several reasons for this exclusion. Foremost is the principle that "review of agency action should be based on an agency's stated justifications, not the predecisional process that led up to the final, articulated decision. "*Ad Hoc Metals*, 227 F. Supp. 2d at 143;*accord Ohio Valley*, 2003 WL 43377, at *6;*see also San Luis Obispo*, 751 F.2d at 1324.Further, to require inclusion of "documents reflecting internal agency deliberations could hinder candid and creative exchanges regarding proposed decisions and alternatives, which might, because of the chilling effect on open discussion within agencies, lead to an overall decrease in the quality of decisions."*Ad Hoc Metals*, 227 F. Supp. 2d at 143;*accord Ohio Valley*, 2003 WL 43377, at *6;*see also San Luis Obispo*, 751 F.2d at 1326 ("Inclusion in the record of documents recounting deliberations of agency members is especially worrisome because of its potential for dampening candid and collegial exchange between members of multi-head agencies."). In addition, inclusion of such internal agency discourse might lead to confusion in the public arena if such discussions were accessible prior to the settling of the issues. *Ad Hoc Metals*, 227 F. Supp.2d at 143.

***27** We agree with the principles articulated by these courts. Cluttering the record with the internal discussions between all the regional staff members working on a permit decision would only serve to provide mislea ding, confusing, and potentially internally inconsistent information about the permit decision. [54] The document at issue here demonstrates the problems inherent in placing such documents in the administrative record: one of the authors of the e -mail specifically stated that the e-mail contained his thoughts after a "quick review" of the permittee's inf ormation, were "back of the envelope estimates, " and were a "guess." Preliminary thoughts of Agency personnel are not appropriate items for placement in the record. Accordingly, because we consider Item 8 to constitute a predecisional agency deliberation, [55] we deny Petitioner's request to add it to the administrative record, and it will be regarded as stricken from the record in this permit appeal.

g. *Documents Sent from the State to the Region (Item 5)*

Item 5 consists of two documents that MA DEP sent to the Region: (1) an MA DEP document providing responses to selected comments on the Draft Permit marked "DRAFT MAY 29, 2003," and (2) a cover e-mail from Lee MacEachern, MA DEP, to several regional personnel. The e -mail says: "Attached please find DEP's final draft of it's [sic] responses to comments received pertaining to its Brayton Point NPDES Review. Please contact Dave Johnston is [sic] y ou have any questions/concerns or suggested changes."Petition attach. D. Petitioner claims that the *NPDES Manual* requires inclusion of such correspondence between the state's regulatory personnel and the Region in the administrative record. First Mot. to Suppl. A.R. at 4-5.

In response, the Region argues that the documents reflect privileged, deliberative consultations between the Region and MA DEP regarding various aspects of the permit and that these should not be included in the administrative record. [56] Reg. Opposition to Mots. to Suppl. A.R. at 2, 10 -11. The Region claims that Massachusetts sent the document to the Region in response to the Region having sent it comments submitted by Petitioner that addressed certain state analyses and "in response to the Region's request for the [s]tates's views concerning state air and noise regulations. "*Id.* at 11.The Region contends that caselaw concerning Exemption 5 under the Freedom of Information Act ("FOIA"), 5 U.S.C. § 552, may be used as a guide in determining whether a document is a "privileged, deliberative record. " *Id.* at 14.Exemption 5 protects disclosure of "inter-agency or intra-agency memorandums or letters which would not be available by law to a party other than an agency in

litigation with the agency. "5 U.S.C. § 552(b)(5) . The Region argues that although the communication in question is n ot between two federal agencies (and hence does not fall within FOIA's definition of "inter-agency" *per se*), courts have interpreted Exemption 5 to allow communications between a federal agency and a state when the state is acting in a context similar to t hat of a consultant or when the two agencies are acting in a coordinated regulatory effort. Reg. Opposition to Mots. to Suppl. A.R. at 14 -15 (citing *Gen. Elec. Co. v. EPA* , 18 F. Supp. 2d 138, 141 (D. Mas s. 1998); *Citizens for Penn.'s Future v. U.S. Dep't of Interior*, 2003 U.S. Dist. LEXIS 20367, at *15-17 (M.D. Pa. Aug. 27, 2003)). The Region argues that a similar analysis to that in *General Electric* should apply here. Significantly, Petitioner has not responded to these arguments in any of its later briefs.

***28** We conclude that this document is a predecisional, deliberative document. We base our decision primarily on the text of the e-mail, which indicates that the document is the final *draft* and solicits comments from the Region. Furthermore, the document itself indicates that it is a "DRAFT." Clearly, the document is not Massachusetts' final response to comments and thus is predecisional.[57] Further, as discussed below, we conclude that the document is a privileged, deliberative document.

As the *General Electric* court explained, "[b]ecause agencies often need to rely on the 'opinions and recommendations of temporary consultants,' those consultations constitute 'an integral part of [the agency's] deliberative process' and are thus 'intra-agency' in character."18 F. Supp. 2d at 141 (quoting *Ryan v. U.S. Dep't of Justice* , 617 F.2d 781, 789 -90 (D.C. Cir. 1980)). Furthermore, "[t]he rationale behind protecting outside advice [to the agency in question] 'applies with equal force to advice received from state as well as federal agencies. "'*Id.* (quoting *Mobil Oil Corp. v. Fed. Trade Comm'n* , 406 F. S upp. 305, 315 (S.D.N.Y. 1976), *modified*, 430 F. Supp. 849 (S.D.N.Y. 1977)). Thus, concludes the *General Electric* court:

> The boundaries of the federal executive deliberative process privilege in [a] co -regulatory situation extend only so far as is necessary to protect actual federal deliberative processes. This means that when the federal agency *asks* the state agency for data, either directly or by necessary implication, and then *uses* the data received, so much of any document received as will reveal the federal deliberative process is privileged. * * * In such circumstances, the state agency is functionally a consultant for the federal agency and its unprivileged documents - when transmitted to the federal agency - become privileged intra-agency documents if actually used by the federal agency in its deliberative process.

Id. at 142.

Here, the state sent the Region its draft comments so that the two entities could coordinate their regulatory activities and also, in part, to respond to q uestions from the Region. These are the very types of activities the *General Electric* court (and other courts) have found to fall within Exemption 5 of FOIA. Moreover, the document sent to the Agency was intended to be used in its deliberative processes. [58] Consequently, we conclude that the Item 5 does not have to be placed in the administrative record and will regard it as stricken from the record on appeal.[59]

B. *Other Administrative Record Issues*

In the Petition, Dominion raises two issues regarding the state of the administrative record in this permit proceeding: that it was not prepared properly and that the Region failed to base its decision on the record and instead prejudged the final permi t decision. Petition at 20-24. We address these in order below.[60]

1. *Inadequate/Improper Administrative Record*

***29** Petitioner first asserts that the Region failed to prepare a proper administrative record as required by EPA's regulations and the *NPDES Manual* and that this constitutes a clear error of law. Petition at 20. In particular, Petitioner alleges that t he Response to Comments document and the administrative record for this permit "are assembled in such a way as to substantially impede meaningful review of [the Region's] decision -making process. "*Id.* In support of this argument, Petitioner cites to the fac t that throughout the Response to Comments document, the Region repeatedly states that it has addressed a point "elsewhere" but that the Region fails to specifically cite to where in the Response to Comments such a

response is located. *Id.* Petitioner alleges that "there is no 'elsewhere' for most of the references" and cites the Region's discussion of the critical temperature threshold for fish as a particular example of where the "elsewhere" is allegedly missing. *Id.* In addition, Petitioner claims that the administrative record is "jumbled, disorganized, and incomplete." *Id.* In particular, Petitioner asserts that an electronic index of the record was not available for several weeks after issuance of the Final Permit and that, as evidenced by its motion to supplement the record, it has identified several documents, including its own submittals and various inter-and intra-agency communications, that were not in the administrative record. *Id.* at 21.Petitioner states that it therefore has "no confidence that the [r]ecord contains all of the material on which Region I relied, much less pertinent information that Region I had and chose to ignore."*Id.*

The Region responds that the regulations "do not specify how a permit's fact sheet, responses to comments, or administrative record should be constructed," although they do specify certain items that must be included in the record. Response at 63 (citing 40 C.F.R. §§ 124.8, .9, .17, .18). The Region maintains that it "more than satisfied these requirements." *Id.* The Region asserts that not only did it provide a fact sheet, but it also provided a "well-organized, detailed and heavily referenced determinations document."*Id.* The Region contends that it "made the administrative record immediately available to Petitioner upon request," but admits that the record was somewhat disorganized due to the fact that materials from several different offices were compiled to assemble the record. *Id.* The Region also admits that although it made the final administrative record and a typed index of the record available immediately upon request, it took several weeks to provide an electronic index due to computer problems. *Id.* at 64.The Region asserts, however, that there is no requirement that it even provide an electronic index. In addition, the Region claims that it made the Draft Permit, the fact sheet, the Determinations Document, the Final Permit, and the Response to Comments document available on-line. *Id.* In sum, the Region asserts that "Petitioner cannot fairly argue that it has been deprived of a meaningful opportunity to comment on the Draft Permit or Final Permit. Indeed, Petitioner filed thousands of pages of comments on the Draft Permit, including post-comment submissions that were accepted by the Region * * *."*Id.*Finally, the Region disputes Petitioner's argument that it did not provide a discussion of critical threshold temperature for fish "elsewhere" in the document, citing approximately ten other pages where it discussed this issue.

***30** As an initial matter, we note that this permit proceeding was a very long, complicated, and contentious one (as is obvious from the fact that there are nine participants on appeal) spanning several years both before and after the final permit decision. The Certified Index to the Administrative Record lists what appears to be over 1,800 documents. Although it is somewhat unclear what system was used to order (i.e., numerically list) these documents, the index does list the author and subject of each document, the date it was received, and the recipient of the document. The Agency has clearly compiled a substantial administrative record in this proceeding. We do not believe the fact that an electronic index of the record was not available for several weeks is sufficient reason to find the record inadequate, especially in light of the fact that Petitioner was provided with a typed index and there is no requirement that an electronic index be prepared. *See*40 C.F.R. § 124.18 (administrative record requirements).

Regarding the Region's use of the term "elsewhere" in its Response to Comments document, there is no requirement in the regulations that, where the Region's response to a comment relies, at least in part, on its response to another comment, it must explicitly cross-reference such other response by page number or otherwise, *see*40 C.F.R. § 124.17 (regulation governing the permit issuer's response to comments document), and we do not know of such a requirement elsewhere. Petitioner has not cited to any particular regulatory requirement requiring that the Region provide such a cross-referenced response to comments document. [61] If cross-referencing ambiguities were to render a response to comments document incoherent, then there might be an issue. Based on our review of the Region's Response to Comments document, however, we do not find this to be the case here.[62] Rather, the Region's approach is discernable, albeit with some effort.[63]

With respect to Petitioner's claim that the record may be incomplete and documents may be missing, Petitioner has already utilized the appropriate method for challenging missing documents: it filed a motion to supplement the record. We have addressed this motion and the allegedly missing documents (including inter and intra-agency documents) above. We will not discuss this issue here except to point out that a number of the "missing" documents were purposely not included in the record by the Region. Additionally, the fact that the Region may have inadvertently left copies of a few documents out of the record that was physically compiled at the Region until Petitioner pointed out that such documents were missing, *see* Reg. Opposition to Mot. to Suppl. A.R. at 5, does not mean that the administrative record was incomplete. *See In re J&L Specialty*

Prods. Corp., 5 E.A.D. 31, 80 (EAB 1994) ("The Region's oversight or error in responding to [Petitioner's] request for a copy of the administrative record alone, does not necessarily mean that the administrative record was incomplete, or that the Region failed to review everything in the administrative record prior to drafting the permit."). According to the regulations, not all documents need not be physically placed in the record. *See* 40 C.F.R. §§ 124.9(c), .18(e). Moreover, besides those documents that the Region did not include in the record because it believed them to be privileged or irrelevant, there is no evidence that the Region purposely left out any other documents or refused to place them in the record once it learned of their omission. Finally, Petitioner has failed to demonstrate any prejudice that resulted from the Region's oversight. In fact, most, if not all, of the documents inadvertently omitted are documents that Petitioner submitted and that the Region specifically indicated it considered in its decision. For all of these reasons, we do not find that the permit is legally defective based on these inadvertent omissions. *See J&L Specialty*, 5 E.A.D. at 80.

2. *Region's Alleged Failure to Rely on Administrative Record*

***31** Petitioner next alleges that the Region failed to make its decision on the administrative record as required by 40 C.F.R. § 124.18 and the Administrative Procedure Act, 5 U.S.C. §§ 551-706. Petitioner states that this is manifested by evidence of bias in the Region's responses, by the Region's inclusion of outdated information in the RTC, and by the Region's failure to prepare a new fact sheet.[64] Petition at 22-24. We consider each of these allegations in turn.

a. *Bias*

Petitioner argues that a number of statements in the Response to Comments document reflect the Region's lack of objectivity. Petition at 22. As an example, Petitioner points to the Region's use of the term "complaint" in several places in the document to describe Petitioner's comments. *Id.* (citing seven instances). Petitioner also claims that the Region's suggestion that the permittee "dragged its feet" and unduly delayed the process also demonstrates the Region's lack of objectivity and is irrelevant to the substantive issues of the permit. *Id.* Petitioner contends moreover that it was the Region and the Region's advisory committee that actually caused the delays. *Id.* Petitioner lists several other alleged indications of the Region's bias. *See id.* at 23.

In response, the Region first claims that it used the word "complaint" periodically "to vary its word choice in the document," i.e., essentially as a synonym. Response at 65. The Region maintains that the term was not meant pejoratively. *Id.* Regarding its statements about Petitioner's late submissions, the Region argues that it pointed this out in order to "underscore the fact that [it] had delayed making the Draft Permit decision in order to fully review Petitioner's submission." *Id.* at 65-66. The Region argues that the remaining examples provided by Petitioner likewise do not show bias. *Id.* at 66-67.

As we have stated in several previous opinions, "an unbiased decision maker is an essential element in any meaningful due process hearing, including the administrative permitting process." *In re Jett Black, Inc.*, 8 E.A.D. 353, 375 (EAB 1999); *accord In re Marine Shale Processors, Inc.*, 5 E.A.D. 751, 784 (EAB 1995) (citing *Goldberg v. Kelly*, 397 U.S. 254, 271 (1970)). In order to demonstrate bias on the part of the decisionmaker, petitioner must show that the decisionmaker was "'so psychologically wedded to [his] opinions that [he] would consciously or unconsciously avoid the appearance of having erred or changed position,' and that such opinions 'as a practical or legal matter foreclosed fair and effective consideration' of the evidence presented during the permitting process." *Marine Shale*, 5 E.A.D. at 788 (quoting *Withrow v. Larkin*, 421 U.S. 35, 57-58 (1975)); *accord Jett Black*, 8 E.A.D. at 375. The standard for establishing bias and "overcoming the presumption of honesty and integrity attaching to the actions of government decisionmakers" is thus very high. *Marine Shale*, 5 E.A.D. at 788-89. Petitioner here falls far short of meeting this standard in this case. We find its arguments altogether unconvincing.[65]

b. *Reliance on Outdated Information*

***32** Petitioner also asserts that the Region cited to and relied upon outdated data that were "demonstrably incorrect." Petition at 23. In particular, Petitioner points to a February 2003 study by Dr. Joseph DeAlteris that allegedly updated his analysis and corrected certain data. *Id.* at 23-24. Petitioner claims that the Region acknowledged its receipt of these data, but then "continues to refer elsewhere to incorrect data's having been used in the DeAlteris analyses and cites those errors as a reason to reject the analysis."[66] *Id.* at 24 (citing RTC at VII-32,-34); *see also id.* at 11-12 (asserting that the Region failed to address

Dr. DeAlteris' analysis).

The Region responds that it considered all the submissions of Dr. DeAlteris, including the February 2003 submission, but that it also disagreed with various aspects of his analysis "apart from the data issues, " which it explained in detail in its Response to Comments document. Response at 67; *accord id.* at 40-41.Upon review of the portions of the record cited by the Region on this issue, we find that the Region's description of the use of the DeAlteris data to be a more accurate depiction of the situa tion. *See* RTC at IV -32 to -34,-48 to -50,-65,-73, VII -30 to -34,-38 to -40. Accordingly, we find no error in the Region's analysis on this point and no evidence that the permit was not based upon the administrative record.

c. *Fact Sheet*

Petitioner claims that the Region failed to prepare a new fact sheet to accompany the Final Permit and that this demonstrates that the Agency knew there would be no material changes between draft and final permit issuance (i.e., had prejudged the permit). Petition at 24. Pe titioner's argument misses the point of the fact sheet requirement and the part 124 regulatory requirements.

The NPDES regulations require a permit issuer to prepare a fact sheet with the issuance of a draft permit. [67]40 C.F.R. §§ 124.8(a), .9(b). The fact sheet must contain "the principal facts and the significant fac tual, legal, methodological and policy questions considered in preparing the *draft permit* ."*Id.* § 124.8(a) (emphasis added). This fact sheet is part of the administrative record for the draft permit as well as for the final permit. *See id.* §§ 124.9(b), .18(b). There is no corresponding requirement for the preparation of a fact sheet at the time of final permit issuance, nor is there any requirement to update the fact sheet. *See id.* § 124.18(b). Instead, the Region is required to prepare a response to comments document, which "[s]pecif [ies] which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change" and describes and responds to all significant comments raised during the comment period on the draft permit. *Id.* § 124.17(a)(1)-(2). Thus, the response to comments document provides the Agency's final rationale for its decision, as well as documenting any changes between the draft and final permits. Contrary to Petitioner's arguments, the fact sheet is not meant to contain these items.

***33** Here, the Region issued a fa ct sheet, as well as a lengthy "Determinations Document," at the same time it issued BPS's Draft Permit. The Region also issued an extremely lengthy Response to Comments document at the time it issued the Final Permit. That is all it was required to do. Accordingly, we find no error in the Region's failure to issue a "final" fact sheet, nor do we find this failure to be evidence that the permit decision was not based on the administrative record.

VI. *ANALYSIS OF THE ISSUES*

A. *Thermal Discharge Limitations and CWA Sections 301 and 316(a)*

As mentioned above, *see supra* Part III.A, the Region initially established technology -based thermal effluent limitations for BPS under CWA section 301. *See* Determinations Doc. at 8-1 to-2. However, because the Region agreed with Petitioner that those technology-based thermal effluent limitations were more stringent than necessary to assure the protection of the BIP in Mount Hope Bay, it concluded that a variance under CWA section 316(a) would be appropriate. *Id.* at 8-3.The Region first considered the thermal variance proposed by Petitioner and determined that it was not sufficient to assure protection of the BIP, thereby failing to meet the CWA section 316(a) statutory standard. *See id.*Accordingly, the Region denied Pet itioner's variance request. *Id.* However, rather than imposing the technology-based thermal effluent limitations on Brayton Point in the Permit that would otherwise apply, the Region developed a site -specific variance that it determined did meet the CWA section 316(a) standard. [68]*Id.*The Region then used these variance -based limits as the thermal discharge limitations in Petitioner's NPDES permit. *See id.*;*see also* Final Permit.

The participants raise a variety of arguments regarding the appropriateness of the Region's CWA section 301 and 316(a) determinations. Petitioner, in its Petition and subsequent briefs, takes issue with three of the Region's determinations related to the thermal discharge limitations imposed in the Permit: (1) the Region's establishment of initial baseline thermal efflue nt limitations under CWA section 301; (2) the Region's rejection of Petitioner's section 316(a) variance pr oposal; and (3) the

section 316(a) variance ultimately set by the Region. *See* Petition at 24-33; DEBP Suppl. Br. at 6-22; DEBP Reply at 3-11. For their part, the amici focus their responses primarily on the second and third sets of issues. [69] We consider each of the three sets of issues in turn.

1. *Issues Surrounding the Region's Establishment of Initial Baseline Thermal Effluent Limits Under Section 301*

a. *Participants' Arguments*

Petitioner's arguments regarding the initial effluent limitations established by the Region using the "Best Available Technology" or "BAT" standard under section 301 can be divided into two general categories. One of these is a challenge to the actual BAT determination itself. Petitioner argues that the Region "engaged in an erroneous analysis of the technology options for BAT." Petition at 25. More specifically, Petitioner claims that the Region "refused to consider the cost effectiveness of technological options in reducing thermal discharges," including the cost-effectiveness analysis Petitioner submitted.[70] *Id.* Petitioner relies on two cases in support of its contention that the Region's approach was erroneous. *Id.* at 25-26 (citing *Appalachian Power v. Train*, 545 F.2d 1351 (4th Cir. 1976); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011 (D.C. Cir. 1978)).[71]

***34** Petitioner's second general section 301 challenge is to the manner in which the Region applied the BAT standard to BPS. Petitioner argues that the Region used a different BAT standard for BPS (i.e., closed-cycle cooling) than had been applied to similar already-existing facilities in previous Agency decisions (i.e., open-cycle cooling)[72] and failed to justify this new BAT standard. Petition at 25-26; DEBP Suppl. Br. at 6-8; DEBP Reply at 3-5. Petitioner contends that "[c]ase-by-case technology determinations do not exempt the Region from the obligation to demonstrate consistency with past practice - or, at the very least, to provide a compelling justification for any departure from that practice." DEBP Reply at 4; *see also* Petition at 25 (citing *Mass. Dep't of Educ. v. U.S. Dep't of Educ.*, 837 F.2d 536, 544-45 (1st Cir. 1988); *P.R. Sun Oil v. EPA*, 8 F.3d 73, 78-79 (1st Cir. 1993)). Petitioner asserts that the Region has not "identified any case in which an existing facility has been required to retrofit an entire plant with a closed-cycle cooling system in order to meet the BAT standard," DEBP Suppl. Br. at 7, nor has it provided any justification for its alleged departure from prior practice, Reply at 4. Petitioner more particularly argues that the examples the Region relied on in support of the BAT determination "refer without exception to other categories of point sources and unrelated types of discharges" and thus are, presumably, inapplicable. DEBP Suppl. Br. at 7 n.7. Petitioner additionally contends that the cases in which other facilities converted to closed-cycle cooling that the Region cites in its brief are not remotely comparable to BPS as an engineering matter. DEBP Reply at 4 (citing Response attach. A). Petitioner further maintains that "[a]dministrative consistency has particular force in the application of the [CWA's] technological standards." DEBP Suppl. Br. at 7. Thus, according to Petitioner, the Region subjected BPS to "disparate treatment." *See, e.g.*, Petition at 25; DEBP Suppl. Br. at 6; *see also* DEBP Reply at 3-5.

In response to these arguments, the Region asserts that the CWA section 301-related issues are essentially moot because the thermal limits set in the Permit were ultimately based on a CWA section 316(a) variance, not the section 301 BAT standard. Response at 8 n.13; Region Suppl. Resp. at 3 & n.1. The Region further asserts that Petitioner's allegations of disparate treatment are irrelevant here because a section 316(a) variance determination is based on a site-specific analysis. Reg. Suppl. Resp. at 3-4 & n.2. Nevertheless, argues the Region, it properly determined BAT limits for BPS. *Id.* at 3 n.1. The Region also claims that, contrary to Petitioner's arguments, it had provided evidence of other power plants that converted from open-cycle to closed-cycle cooling, "some of which conversions were undertaken to better control thermal discharges." *Id.* at 4 n.2. The Region also notes that, as a factual matter, the variance limits in the Permit do not require any specific technology (i.e., do not require closed-cooling *per se*); rather, they are performance standards that essentially set temperature and volume limits. Response at 11.

***35** In its reply brief, Petitioner contends that the Region's reliance on mootness "must fail because, ultimately, the BAT determination drives the variance result." DEBP Reply at 3. Petitioner argues that the Region's CWA section 301 technology-based limits "formed the premise for the Permit's thermal limits" and, in fact, "essentially are the Permit limits." *Id.* Petitioner further argues that because section 316(a)'s language "provides a variance *from* 'more stringent' standards * * *, had Region I properly found BAT for Brayton Point Station to be open-cycle cooling, the Region could not have reached the result that it did." *Id.* at 3-4.

Before addressing the substantive issues raised by Petitioner, we must first consider whether the issues raised regardin g the Region's BAT analysis are moot.

b. *Whether Petitioner's Claims Pertaining to the BAT Analysis Are Moot*

Although at first blush the Region's argument appears to have some force, upon closer examination Petitioner's arguments are nearer the mark, at least under the facts and circumstances of this case. The thermal effluent limitations in the Final Permit issued by the Region were explicitly based on a section 316(a) variance, not on the section 301 BAT standard. *See* RTC at I-3; *see also* DPDD at 8-1 to -4. The section 316(a) variance standard - i.e., that the effluent limitation "will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water" - is a site-specific, biologically-based standard and thus is very different than the technology -based BAT standard in section 301(b)(2)(A).[73] *Compare* 33 U.S.C. § 1326(a) *with id.* § 1311(b)(2)(A). Consequently, the underlying factual basis and the actual analysis used in making a determination under section 316(a) would be completely different substantively from those used in making a section 301 BAT determination. Nevertheless, alth ough the analyses underlying these two determinations wholly differ, the actual numeric limitations established pursuant to a section 316(a) variance do bear some relationship to the underlying section 301 limitations. The section 301 limitations are essen tially the thermal effluent "default" (or "baseline") limits, i.e., the most stringent effluent limitations that would be set for the particular permit. In this particular case, the underlying relationship between these two standards is critical because, a s Petitioner points out, if the Region did indeed inappropriately establish the section 301 BAT "baseline" effluent limitations as requiring closed -cycle cooling rather than open-cycle cooling, by ultimately setting the variance at a level *more stringent* then open-cycle cooling, the establishment of the BAT "baseline" limitations does impact the variance limitations. [74] In fact, if the Region had set the section 301 limits in a manner consistent with Petitioner's view, then a section 316(a) variance may not even have been necessary. Thus, in this case, the "baseline" section 301 BAT limitations are not moot. Accordingly, we must consider the Region's BAT analysis.

c. *The Development of Brayton Point's Baseline Thermal Effluent Limitations*

***36** As mentioned earlier, heat is considered a nonconventional (and nontoxic) pollutant under the CWA. *See supra* Part II.A. Thus, CWA sections 301(b)(1)(C) (i.e., state WQSs) and 301(b)(2)(A) (i.e., the BAT standard) govern the establishment of appropriate "baseline" effluent limitations for heat, and, in any given case, the more stringent of these applies. 33 U.S.C. § 1311(b)(1)(C), (b)(2)(A). In determining the thermal effluent limitations for the BPS's Final Permit, the Region assessed what the effluent limits would be under both the technology -based standard and the water-quality based standard and found that the technology -based limits were more stringent. DPDD at 8 -1 to-3. Accordingly, the section 301 "baseline" effluent limitations in the Permit are based on a BAT determination and not on state WQSs.[75]

The determination of BAT for a source or category of sources is generally based upon regulations, otherwise known as "effluent limitat ion guidelines " or "ELGs," promulgated by the Agency pursuant to CWA section 304(b)(2). CWA § 301(b)(2)(A); 33 U.S.C. § 1311(b)(2)(A); *see* 40 C.F.R. § 125.3(c). *See generally Tex. Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 927-28 (5th Cir. 1998). Where there are no applicable ELGs, the determination of BAT for a source is done on a case-by-case basis using Best Professional Judgment ("BPJ") under CWA section 402(a)(1). *See* 33 U.S.C. § 1342(a)(1) (B); 40 C.F.R. § 125.3(c)(2) (where no applicable or promulgated ELGs exist, technology -based analysis to be done on ca se-by-case basis); 40 C.F.R. § 125.3(a)(2)(i)(B), (v)(B) (effluent limits established case-by-case are based on BPJ); *see also NRDC v. EPA*, 863 F.2d 1420, 1424-25 (9th Cir. 1988); *NRDC v. EPA*, 859 F.2d 156, 195 (D.C. Cir. 1988) ; *NRDC v. EPA*, 822 F.2d 104, 111 (D.C. Cir. 1987); *NPDES Manual at 68; cf. Hudson Riverkeeper Fund, Inc. v. Orange & Rockland Utils.* , 835 F. Supp. 160, 165 (S.D.N.Y. 1993) (explaining that where no national section 316(b) technological standards have been promulgated, "[t]his leaves to t he Permit Writer an opportunity to impose conditions on a case by case basis, consistent with the statute, and a view that best available doesn't mean perfect").[76]

In 1974, the Agency issued regulations for thermal discharges from point sources in the steam electric power category (of which BPS is a member). *See* 40 C.F.R. §§ 423.11(d) , .13(*l*), (m) (1975). Those regulations, however, were remanded by the United States Circuit Court of Appeals for the Fourth Circuit, *see Appalachian Power v. Train* , 545 F .2d 1351 (4th Cir.

1976), and the Agency has never repromulgated a thermal discharge ELG for this category. Currently, therefore, there are no applicable ELGs for thermal discharges for the steam electric power generating category. The Region therefore was required to establish BAT for BPS on a case-by-case basis using BPJ under CWA 402(a)(1)(B). 40 C.F.R. § 125.3(c)(2); *accord In re Pub. Serv. Co. of N.H.*, 1 E.A.D. 332, 338 (Adm'r 1977) [hereinafter "Seabrook I") ("The effect of the remand of the steam electric generating guidelines [in *Appalachian Power*] was, as urged by the Utilities, to require the Agency to determine what is [BAT] for existing sources on a case -by-case basis under Se ction 402(a)(1)."); *see also NRDC*, 822 F.2d at 111; *NPDES Manual* at 68.

***37** The Region performed a site -specific analysis in its Determinations Document for BPS using B PJ, providing a lengthy analysis of the technology-based thermal discharge standards it believed, in its professional judgment, were appropriate at the facility. *See* DPDD at 4 -1 to-123. The Region included an analysis of several different cooling system te chnologies, their technological availability, and their economic achievability. [77] *Id.* at 4-22 to-95. The Region concluded that the "Closed-Cycle Entire Station Option" (i.e., for all four units) was BAT for BPS and that a thermal discharge limitation based on that system was appropriate. *Id.* at 4-123.

d. *Analysis of the Region's BAT Determination*

As described above, *see supra* Part VI.A.1.a, Petitioner's principal contentions regarding the BAT analysis for BPS can be divided into two general categories: first, that the BAT analysis itself was erroneous due primarily to the Region's alleged failure to properly consider the cost effectiveness of the technological options; and second, that the Region treated BPS in a disparate manner in determining that closed -cycle cooling was BAT. Upon review of the Determinations Document, comments submitted on the Draft Permit, and the Respons e to Comments document, we find no clear error in the Region's BAT analysis.

Notably, the Region, in its Response to Comments document, addressed the same issues that have been raised on appeal. [78] In particular, the Region responded to several comments concerning the first of these general issues, i.e., the Region's BAT analysis and, in particular, the consideration of the "cost effectiveness" of the technological options. *See* RTC at VIII -11 to-14, cmts. 9 -12. Relying on the CWA's statutory language as well as several courts' interpretation of that language, the Region explained that while it is required to consider "the cost of achieving efflue nt reductions" when developing BAT standards, "the CWA does *not* require any sort of comparison between, or balancing of, costs and benefits of BAT limits. "*Id.* at VIII-12 (comparing the language in CWA § 304(b)(1)(B) with the language in CWA § 304(b)(2)(B) and citing several cases including *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 71 (1980); *Tex. Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 936 (5th Cir. 1998); *Reynolds Metals Co. v. EPA*, 760 F.2d 549, 565 (4th Cir. 1985) ; *Ass'n of Pac. Fisheries v. EPA*, 615 F.2d 794, 818 (9th Cir. 1980)). The Region als o pointed out that courts had clearly indicated that the Agency has considerable discretion in how to consider and weigh costs in a BAT analysis. *Id.* The Region then stated it had evaluated "both the cost and the thermal effluent reduction capabilities of various technological options as well as the thermal effluent reductions they could achieve and the degree to which they would represent the BAT in terms of making progress toward eliminating the discharge of pollutants. "RTC at VIII -13; *see also* DPDD at 4 -62 to-95 (discussing the economic achievability of various technological options). Finally, in reference to the "cost-effectiveness" analyses submitted by Petitioner, which apparently were cost -benefit analyses, the Region stated it had performe d the required BAT cost analysis and that "the analysis suggested by the permittee is *not* required for a BAT determination."RTC at VIII-14 (response to comment 11).

***38** The Region also provided a thorough response to com ments regarding the alleged "disparate treatment" of BPS [79] - Petitioner's second general challenge to the Region's BAT determination on appeal - in its Response to Comments document.[80] *See* RTC at VIII -1 to -11,-14 to -16. The Region explained that it did not believe it had departed from a ny "long-standing practice" in applying CWA section 301 to BPS in its Determinations Document, but instead had followed "its practice of assessing each permit on a case -by-case, BPJ basis. "*Id.* at VIII -5. The Region pointed out that "differing circumstances from facility to facility will naturally result in different effluent limitations " and that "nothing in the CWA guarantees that every facility will be required to meet the exact same standard. "*Id.; see also id.* at VIII-7 (citing *NRDC v. EPA*, 859 F.2d 156, 199 -201 (D.C. Cir. 1988)). The Region also stated that BAT standards are required to be based on the "single best performing plant in an industrial field, " and that this "clearly demonstrates that the g oal of reducing discharges supercedes the subsidiary goal of applying uniform standards. "*Id.* at VIII-7 (citing *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177,

239 (5th Cir. 1989) (quoting Senate Comm. on Public Works, 93d Cong., A Legislative History of the Water Pollution Control Act Amendments of 1972, at 170 (Comm. Print 1973) (Conf. Rep.) (emphasis added) [hereinafter 1972 Legislative History])).[81] The Region further noted that, in fact, "[t]he first NPDES permit issued for Brayton Point in 1973 required closed-cycle cooling for Unit 4,"[82] although this requirement was relaxed in 1982 pursuant to a CWA section 316(a) variance. *Id.* at VIII-4; *see also* DPDD at 3-3.

In its Response to Comments document, the Region also disagreed with Petitioner's suggestion that the 1974 regulations should or could be relied upon "as either an actual or a *de facto* BAT determination for units such as Brayton Point units 1, 2, and 3." RTC at VIII-1. The Region explained that those regulations were judicially remanded, were never repromulgated, and thus are not currently applicable. *Id.* at VIII-2. The Region further noted that, in the preamble to those 1974 regulations, the Agency had explained its rationale for not requiring certain older units (such as Brayton Point Units 1, 2, and 3) to retrofit to the closed-cycle requirements that it had required for most other units: that EPA expected "that units placed into operation before 1970 would have ceased operating, and therefore ceased discharging heat, before now " and, in particular, before "the year 2000." *Id.* (citing 39 Fed. Reg. 36,187-88 (Oct. 8, 1974)).

***39** Concerning the issue of comparable faciliti es, the Region stated in its Response to Comments document that "it ha[d] provided a number of appropriate examples of cooling towers being retrofitted to large existing power plants to convert them from open-cycle to closed-cycle cooling."*Id.* at VIII-10 (citing DPDD ch. 4). The Determinations Document does contain a lengthy analysis of the availability of closed-cycle cooling, DPDD at 4-22 to-56, and cites to several documents that describe examples of such cooling towers, *see, e.g., id.* at 4-31 & n.104; *id.* at 4-56 & n.163, including documents the Petitioner itself submitted, demonstrating that "mechanical draft cooling towers are technologically available for retrofitting at Brayton Point" and had been "designed and installed to work effectively in coolin g systems using salt or brackish water, as Brayton Point's existing cooling system does, "*id.* at 4-41 & n.132 (citing *Final 316(a) and(b) Demonstration* , vol. IV, app. H., at 3-2). The Region also explained why the sole permit to which Petitioner compared BP S in its comments as demonstrating that BAT was not closed-cycle cooling was inapplicable.[83]

Upon review, we do not find the Region's BAT determination to be clearly erroneous. *See* DPDD ch. 4. The Region provided a thorough analysis in its Determinations Document explaining why it believes this technology is appropriate at BPS. [84] In addition, the Region duly considered the issues raised in the comments. In fact, we find particularly persuasive the fact tha t the administrative record contains information and/or refers to supporting inf ormation describing several plants that have retrofitted part or all of their facilities from open -cycle to closed-cycle cooling using mechanical draft cooling towers, *see, e.g.*, A.R. 2326, 2183, 3002, 3082, 3328, 3330; *see also* DPDD at 4-25 to-34; RTC at VIII-14 to-16, and that closed-cycle cooling was found to be BAT for one of the units in this *very same facility thirty years ago* , DPDD at 3-1; *see also* 39 Fed. Reg. 36,186, 36,187 (Oct. 8, 1974) (noting that closed-cycle cooling was available in 1974 and was in widespread use in the industry at that time).[85] These facts are especially compelling in light of the fact that the CWA's BAT standard focuses on the best performer in the industry and is intended to be technology -forcing.[86]*Kennecott v. EPA*, 780 F.2d 445, 448, 453 (4th Cir. 1985) (explaining that, for a BAT determination, Congress intended EPA to use the "optimally operating plant," thus pushing industries quickly towa rd the no -discharge goal and, in fact, the "model technology may exist at a plant not within the [relevant] industry"); *see also Tex. Oil & Gas Ass'n v. EPA* , 161 F.3d 923, 927-28 (5th Cir. 1998); *NRDC v. EPA*, 822 F.2d 104, 123 (D.C. Cir. 1987) (stating that "the most salient characteristic of this [CWA] statutory scheme, articulated time and again by its architects and embedded in the statutory language , is that it is technology -forcing"); *NRDC v. EPA* , 859 F.2d 156, 211 (D.C. Cir. 1988) (CWA uses a technology -forcing approach); *Weyerhaeuser Co. v. Cos tle*, 590 F.2d 1011, 1057, 1061-62 (D.C. Cir. 1978) (same); *see also* 1972 Legislative History at 163, 170, 1278, 1460. [87] The Region's analysi s and approach appear rational to us in light of all the information in the record. Petitioner has failed to demonstrate clear erro r on the part of the Region. Consequently, we find no reason to disturb the Region's conclusions. [88]*In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998) , *review denied sub nom. Penn Fuel Gas, Inc. v. EPA* , 185 F.3d 862 (3d Cir. 1999).

***40** In particular, we do not find that the Region clearly erred in its consideration of costs in its section 301 BAT analysis. *See* DPDD at 4-62 to-95. The Region extensively considered the costs of various technological options that could be used as BAT at BPS, the economic impacts of these costs on Petitioner and on consumers, and the reasonableness of these costs and

impacts in light of the CWA's s tatutory goals.[89] *Id.; see also id.* at 4-119 to-120 (summarizing the Region's economic achievability analysis). The CWA only requires the Agency to "take into account, " among other things, "the cost of achieving such effluent reduction, " when specifying factors relating to the assessment of BAT.[90] 33 U.S.C. § 1314(b)(2)(B). Numerous courts have held that, while the Agency must consider costs in assessing BAT, it need not perform a cost-benefit analysis, nor is there a specific formula that the Agency must use in considering costs. *E.g., EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 71 (1980) (explaining that "in assessing BAT, total cost is no longer to be considered in comparison to effluent reducti on benefits"); *Tex. Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 936 (5th Cir. 1998) ("In applying the BAT standard, the EPA is not obligated to evaluate the reasonableness of the relationship between costs and benefits."); *Reynolds Metals Co. v. EPA*, 760 F.2d 549, 565 (4th Cir. 1985) (holding that, with respect to BAT, "no balancing is required - only that costs be considered along with the other factors "); *Am. Petroleum Inst. v. EPA*, 858 F.2d 261, 265 (5th Cir.1988) ("[A] direct cost/benefit correlation is not required [for BAT], so even minimal environmental impact can be regulated, so long as the prescribed alternative is 'technologically and economically achievable. '" (quoting 4 Legislative History of the CWA of 1977: A Continuation of the Legislative History of the Federal Water Pollution Control Act, 95th Cong., 2d Sess. 1469-70 (1978) [hereinafter 1978 Legislative History])); *Ass'n of Pac. Fisheries v. EPA*, 615 F.2d 794, 818 (9th Cir. 1980) (concluding that "Congress did not intend the Agency or this court to engage in marginal cost-benefit comparisons " in performing a BAT assessment). *But see Appalachian Power Co. v. Train*, 545 F.2d 1351, 1361 (4th Cir. 1976) (stating that the Agency, for its 1983 BAT regulations, "must consider the benefits derived from the application of its effluent reduction requirements in relation to the associated costs in order to deter mine whether, in fact, the resulting progress is 'economically achievable,' and whether the progress is 'reasonable"'). The legislative history also supports the reading that no cost-benefit analysis is required. The Conference Report stated that, for BAT:

> ***41** while cost should be a factor in the Administrator's judgment, no balancing test will be required. The Administrator will be bound by a test of reasonableness. * * * [T]he reasonableness of what is 'economically achie vable' should reflect an evaluation of what needs to be done to move toward the elimination of the discharge of pollutants and what is achievable through the application of available technology without regard to cost.

1972 Legislative History at 170.

The Region's cost analysis appears reasonable and is consistent with the statute, the case law, and the legislative history. Petitioner's argument that the Region should have performed a cost-effectiveness or cost-benefit analysis, on the other hand, is clearly inconsistent with all three. Moreover, as the Region correctly explained in its RTC document, *see* RTC at VIII-14, even if *Appalachian Power* can be read to suggest that a comparative cost-benefit analysis is required in establishing BAT limits, it is n o longer good law as numerous courts, including the Supreme Court, have held to the contrary. *E.g., Nat'l Crushed Stone*, 449 U.S. at 71; *Tex. Oil*, 161 F.3d at 936; *Reynolds*, 760 F.2d at 565.

Additionally, the other case that Petitioner has relied upon in its appeal - *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011 (D.C. Cir. 1978) - is inapp osite. The court in that case considered the appropriate consideration of costs in connection with the establishment of *BPT*, not BAT. *Id.* at 1045-47.As we already mentioned, *see supra* note 90 and accompanying text, BPT falls under a different subsecti on of the statute and explicitly requires a different cost analysis. *Compare* 33 U.S.C. § 1314(b)(1)(B) *with id.* § 1314(b)(2)(B). The *Weyerhaeuser* court itself noted this distinctio n. *See* 590 F.2d at 1045 (pointing out that the BAT factors track the BPT factors except in one regard, that costs and benefits are *not* separated out for comparison in the BAT analysis). Thus, the *Weyerhaeuser* discussion of the appropriate manner in which to consider costs for a BPT assessment is clearly inapplicable to a BAT analysis. In fact, the *Weyerhaeuser* decision stands for a position directly contrary to Petitioner's.[91]

We also do not find the Region's responses to comments regarding the alleged "disparate treatment" of BPS to be clearly erroneous. *See* RTC at VIII-1 to VIII-11,-14 to-16. Petitioner makes much of the fact that existing facilities have not been "*required* to retrofit an entire plant with a closed-cycle cooling system in order to meet the BAT standard. " DEBP Suppl. Br. at 7 (emphasis added). It appears, however, that, although the referenced NPDES permits themselves did not *require* closed-cycle cooling *per se* as alleged by Petitioner, many of the plants have retrofitted their facilities with mechanical draft

cooling towers in order to meet t he thermal discharge limitations in their NPDES permits, *see* A.R. 2183, 3082, 3330, or to meet the requirements of a compliance consent order, *see* A.R. 3328; *see also* A.R. 2326 (mentioning that cooling towers were constructed to satisfy intervenors). Thus, although the permits themselves may not have required the retrofit, the permits' thermal limitations, in effect, necessitated them. This is not surprising because, as the Region has pointed out, NPDES permits generally do not mandate a specific technology ; they instead establish thermal limits based on the best technology and the permittee may meet these limits as it sees fit. [92]*See* Response at 11; *see also NRDC v. EPA*, 822 F.2d 104, 124 (D.C. Cir. 1987) (discussing the relationship between the establishment of effluent limitations in permits and the prescription of technology and stating that "effluent limitations are premised upon the level of control attainable by proper use of the 'best technology"'). Moreover, the critical question is not *why* other power plants retrofitted their facilities, but *what* the BAT should be now, considering what currently is the best performer in the industry. *E.g., Ass'n of Pac. Fisheries v. EPA*, 615 F.2d 794, 816 (9th Cir. 1980) ("[i]n setting BAT, EPA uses not the average plant, but the optimally operating plant"); *see also FMC Corp. v. Train*, 539 F.2d 973, 973 -74 (4th Cir. 1976) (accepting as BAT a technology used at a pilot plant); 1972 Legislative History at 170.

***42** We are unpersuaded by Petitioner's argument that the Region's statements in the Response to Comments document "make clear" that the Region "does not believe closed-cycle cooling is or should be BAT for regulating thermal discharges at any other facility."[93] DEBP Suppl. Br. at 7. The statements cited by Petitioner are responses to two different questions and, by pulling the statements out of context, Petitioner has mischaracterized them. Reading the Region's statements in context and together with the statements in the Determinations Document to which it cites, it is clear that the Region was attempting to explain the difference between the question of whether a technology is generally "available" for a facility or an industry and the related (but not identical) question of whether the technology should properly be considered the BAT for that facility or industry where the Ag ency does case -by-case analyses of BAT. [94]*Compare* RTC at VIII -7 *with id.* at VIII-11 *and* DPDD at 4-23. As an example of this concept, the Region noted that while it had found that dry cooling was generally available for power plants, it had ultimately determined that it was not properly considered BAT for BPS for other reasons, such as its feasibility. RTC at VIII-11.

Furthermore, we find disinge nuous Petitioner's argument that its "prediction that Region I would not apply its closed -cycle BAT determination in the future has now been confirmed " by the Region's failure to discuss closed -cycle cooling as BAT in developing the Mirant Kendall Station permit. DEBP Reply at 4 n.3. In the determinations document connected with that permit (which we note is an extra-record document, but in the public domain), the Region did not even *perform* a section 301 BAT analysis. *See* U.S. EPA - New England, Clean Wate r Act NPDES Permitting Determinations for Thermal Discharge and Cooling Water Intake from Mirant Kendall Station in Cambridge, MA, at 230 (June 8, 2004), *available at* http://www.epa.gov/region01/npdes/ mirantkendall/assets/pdfs/Kendall_ Determin-Doc_06_08_04.pdf.

Accordingly, for all of the reasons stated above, we find no clear error in the Region's section 301 BAT determination for BPS.

2. *Issues Surrounding the Region's Rejection of Petitioner's Section 316(a) Variance Proposal*

a. *Participants' Arguments*

Petitioner next challenges the Region's denial of its CWA section 316(a) variance proposal. [95] Petition at 27-28; DEBP Reply at 5-7. Petitioner argues that, in considering and then rejecting Petitioner's proposed variance, the Region placed an improper (and excessively stringent) burden of proof on Petitioner. Petition at 27 -28. Petitioner claims t hat the correct standard only requires it to provide "reasonable assurance that the population of organisms *currently occupying* Mount Hope Bay will be protected if the Station reduces its discharge " as proposed. *Id.* at 28.Petitioner asserts that the standa rd does not require it to demonstrate that its discharges will have "no measurable effect " on that population or that "the Station's proposed reduced discharges will not 'delay' the possible recovery of fish species no matter what the cause of their curren t decline."*Id.* (citing RTC at III-7 to-8,-42). Along related lines, as a factual matter, Petitioner challenges the Region's use of an allegedly arbitrary and hypothetical community of fish - the fish community that may have existed before BPS began its ope rations - to measure the impacts of BPS's thermal discharge. *Id.* at 42.

***43** Petitioner also argues that the Region cannot deny a proposed variance on "the mere suggestion [that] Brayton Point Station 'has contributed to the failure to maintain ' the population."*Id.* at 28 n.26 (quoting RTC at III -6). Petitioner also contends that the reasons the Region gave for rejecting Petitioner's proposed variance are based on unsupported assertions. DEBP Reply at 5. Finally, Petitioner argues that the Region disregarded Agency precedent and misinterpreted state WQSs in rejecting Petitioner's proposed variance. Petition at 27-28.

In response, the Region contends that it did not err in denying Petitioner's variance request. Response at 69-75; Region Suppl. Resp. at 5-12. The Region argues that under CWA section 316(a), "Petitioner had the burden of proof to demonstrate that the variance limitations it requested would assure the protection and propagation of the BIP," and that Petitioner failed to carry its burden. Response at 75; Region Suppl. Resp. at 4. The Region notes that the burden imposed by CWA section 316(a) is a stringent one, citing the statutory language, the regulations at 40 C.F.R. §§ 125.70 and 125.73(a), and the legislative history of the 1972 Act, as well as an early section 316(a) case, *In re Seabrook I*, 1 E.A.D. 332, 346 (Adm'r 1977). Response at 69; Region Suppl. Resp. at 5 n.4. The Region also asserts that it did not rely on state WQSs in denying Petitioner's variance proposal. *See* Response at 73-74.

More particularly, and as described in detail later in this discussion, the Region states that the regula tions provide for two types of possible showings in order for an existing discharger to obtain a variance. Response at 69 -70 (describing requirements of 40 C.F.R. § 125.73(c)(1)(i) , (ii)). The Region argues that it p roperly employed both tests in considering Petitioner's variance request. Response at 70; *see also* Region Suppl. Resp. at 5 -10 (describing in more detail the Region's reasons for rejecting each attempted demonstration). The Region contends that it did not apply a "no measurable effects" standard as claimed by Petitioner. Response at 70. The Region asserts that it "specifically explained that these tests may accommodate some adverse effects, but not to the extent that they would interfere with protection and propagation of the BIP."*Id.* The Region also asserts that flaws in Petitioner's analysis led to an underestimate of the impacts of Petitioner's proposed discharges and that Petitioner, upon being told about the problems, did nothing to resolve them. *Id.*

With respect to the appropriate biological population of concern that should be considered in connection with a variance proposal, the Region disagrees with Petitioner's arguments that the proper population of organisms are those "currently occupying the B ay." Response at 72-73. The Region contends that "*whatever* population currently exists" in the bay is not necessarily consistent with the term "balanced indigenous population" as used in section 316(a) of the Act, the regulations, and relevant precedent. *Id.* at 73.The Region argues that Petitioner's arguments here go "too far," because such a position "would allow [] an existing discharger to disrupt the BIP and then argue that its continued thermal discharge should be authorized because it is compatible w ith the new, degraded BIP."*Id.* at 72.This, the Region contends, is inconsistent with the statutory definition of a BIP and the regulatory "no appreciable harm" standard, especially in light of the Act's underlying purpose of "restoring and maintaining the 'biological integrity' of the Nation's waters."*Id.* The Region also argues that, if a thermal discharge had contributed to a failure to maintain the BIP, "such contribution would constitute appreciable harm, taking into account cumulative effects as instructed by 40 C.F.R. § 125.73(a)."*Id.*

***44** In addition, as a procedural matter, the Region asserts that Petitioner's arguments regarding the question of the appropriate population to be considered are merely reiterations of its comments on the Draft Permit, and Petitioner has failed to explain how the Region's responses to those comments were inadequate. *Id.*

MA DEP's position on the thermal variance limitations issues is generally simi lar to that of the Region. MA DEP contends that, under CWA section 316(a), the Agency is authorized to grant a thermal variance "from either or both the technology-based or water quality -based effluent limits if the less stringent variance based limits wil l nevertheless be sufficient to 'assure the protection and propagation ' of the BIP."MA Br. at 4. MA DEP states that both it and EPA agreed with Petitioner that a section 316(a) variance was appropriate in this case. MA Suppl. Br. at 14. However, while MA D EP also notes in its brief that *EPA* determined that the variance proposed by Petitioner would not meet the BIP, MA DEP does not specify whether *it* ever officially spoke to this particular issue. *See Id.* at 15 n.8. There is evidence in the administrative record, however, that MA DEP did conclude that there is currently not a balanced indigenous community of finfish in Mount Hope Bay and that Petitioner's proposed variance would not allow the propagation or maintenance of a balanced indigenous aquatic communi ty in the Bay. DPDD app. A. (Review of PG&E National Energy Group CWA Section 316(a) and (b) Demonstration at 2, 20 (May 16, 2002)).

Rhode Island generally agrees with the Region that the burden of proof under CWA section 316(a) is not on the Agency, but on the applicant (here, Petitioner). RI Br. at 5. In its initial brief, Rhode Island's arguments regarding the thermal varian ce issue focus on the relationship between the state WQSs and the section 316(a) standard. *See id.* at 4-10.In particular, Rhode Island argues that the Region "did not misinterpret the role of state water quality standards in denying Brayton Point's request for a variance,"*id.* at 4, but also notes that the state would have *preferred* more stringent requirements, *id.* at 3. Rhode Island appears to take the position that a state's WQS (including narrative WQS) should be "considered" in section 316(a) variance determinations. *Id.* at 6. Rhode Island argues that states have the "authority to establish enforceable water quality standards, both numerical and narrative for the protection of [their] respective water bodies, " and that the Region has the "discretion" to consider a state's narrative WQSs. *Id.*Rhode Island also observes that a state's narrative requirements "must also be weighed agains t the selected technology and any ultimate determination as to whether a variance was available to Brayton Point. "[96]*Id.* at 9 -10.With respect to the appropriate population to be taken into account in a section 316(a) determination, Rhode Island emphasizes that the statute requires the assurance of the *propagation* of a balanced indigenous population, "not merely the protection of the status quo."*Id.*

***45** The three environmental/citizens groups that address this issue - CLF, STB, and KRC - generally argue that EPA correctly rejected Petitioner's variance proposal. *See* CLF Br. at 3, 6-7; CLF Suppl. Br. at 27-34; STB Br. at 3-4; *cf.* KRC Br. at 3 (arguing that permit should allow no once -through cooling). In particular, CLF asserts that the burden of proof to obtain a variance is on the permittee, the standard is a string ent one, and Petitioner failed to meet it. CLF Suppl. Br. at 27 -28; *see also* STB Br. at 3 (noting that it objected to Petitioner's variance request because STB believed it to be inadequate to allow restoration of the damaged ecosystem). Thus, according to CLF (and presumably STB), Petitioner's variance proposal was appropriately denied by the Region. CLF Suppl. Br. at 27. CLF also argues that the permit must ensure protection of the BIP at a level that would be present but for past pollution. *Id.* at 28 (cit ing *In re Pub. Serv. Co. of Ind., Inc.* , 1 E.A.D. 590 (CJO 1979); 1972 Legislative History at 175).

b. *Analysis*

i. *Section 316(a) and Associated Regulations*

We begin the analysis of this issue by considering the relevant statutory p rovision and associated regulations. Section 316(a) of the CWA provides:

[W]henever the owner or operator of any such [point] source [subject to sections 301 or 306] * * * *can demonstrate to the satisfaction of the Administrator* * * * that any effluent lim itation proposed for the control of the thermal component of any discharge from such source will require effluent limitations more stringent than necessary to assure the pro[t]ection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made, the Administrator * * * may impose an effluent limitation under such sections for such plant, with respect to the thermal component of such discharge (taking into account the interaction of such thermal component with other pollutants), that will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on that body of water.

CWA § 316(a), 33 U.S.C. § 1326(a) (emphasis added). The regulations implementing this section similarly provide that thermal discharge effluent limitations or standards established in an NPDES permit may be less stringent than those otherwise required *"if the d ischarger demonstrates* to the satisfaction of the [Regional Administrator] that such effluent limitations are more stringent than necessary to assure the protection and propagation of " the BIP. 40 C.F.R. § 125.73(a) (emphasis added). The regulations further provide that such demonstration "must show that the alternative effluent limitation desired by the discharger, considering the cumulative impact of its thermal discharge together with all other significant impacts on the species affected, will assure the protection and propagation of a balanced indigenous community. "*Id.* Thus, the statute and the regulations clearly impose the burden of proving that the section 301 thermal effluent limitations are to o stringent on the discharger seeking the variance, not on the Agency. The discharger likewise has the burden of demonstrating that its proposed alternate effluent limitations are sufficient to ensure protection and propagation of the BIP. [97]*See Seabrook I*, 1 E.A.D. at 346 (holding that the applicant has the burden of proof to s how that the section 316(a) test has been met, and that

the burden is a stringent one); *see also* 1972 Legislative History at 175 ("[T]hermal pollutants will be regulated as any other pollutant *unless an owner or operator of a point source can prove* that a modified thermal limitation can be applied which will assure 'protection and propagation of a balanced indigenous population."') (emphasis added).

***46** In order to show that its proposed alternate effluent limitations are sufficient to ensure the protection and propagation of the BIP will be assured, an existing discharger, such as Petitioner, may base its demonstration on "the absence of prior appreciable harm in lieu of predictive studies. "40 C.F.R. § 125.73(c)(1) . Thus, existing dischargers may support a variance request in one of two ways: (1) by employing a retrospective demonstration showing "that no appreciable harm has resulted from the normal component of the discharge [,] ta king into account the interaction of such thermal component with other pollutants and the additive effect of other thermal sources to [the BIP], " or (2) through a prospective demonstration showing that, "despite the occurrence of such previous harm, the de sired alternative effluent limitations (or appropriate modifications thereof) will nevertheless assure the protection and propagation of [the BIP]."40 C.F.R. § 125.73(c)(1)(i)-(ii). The regulations further note that "[i]n determining whether or not prior appreciable harm has occurred," the EPA "shall consider the length of time in which the applicant has been discharging and the nature of the discharge."*Id.* § 125.73(c)(2). The record indicates that Petitioner attempted to demonstrate that its proposed thermal effluent limitations met the statutory and regulatory variance standard using both of these tests. BPS's Comments on the Draft NPDES Permit No. MA0003654 (and supporting documents) Issued by EPA on July 22, 2002, vol. I, at 47 (Oct. 4, 2002) ("BPS Comments on Draft Permit "); RTC at III-16,-49 (indicating that EPA considered Petitioner's variance proposal in light of both tests); *see also* Response at 70 (stating that Petitioner sought a variance based on both tests).

ii. *Region's Analysis of Petitioner's Proposed Variance*

In its Determinations Document, the Region analyzed Petitioner's variance proposal in detail, devoting an entire chapter of the document to its considera tion. *See* DPDD at 6-1 to-58. The Region looked at the types of plant and animal communities currently present and/or historically present in Mount Hope Bay (e.g., phytoplankton, [98] zooplankton, shellfish, fish, other wildlife) and then considered the predicted impacts of Petitioner's proposed thermal effluent limitations on them, an approach suggested by EPA's 316(a) Technical Guidance Manual. *Id.* at 6-14,-56 (citing to Office of Water Enforcement, U.S. EPA, *Interagency 316(a) Technical Guidance Manual and Guide for Thermal Effects Sections of Nuclear Facilities Environmental Impact Statements* (1977)); *see also* 6-15 to-45 (containing a discussion of these communities).

One such community analysis, and of particular importance in this case, is the Region's discussion of several scientific analyses of the finfish population in the Bay over the past several decad es.[99] DPDD at 6 -28 to -29; *see also id.* at 2-3 to -4 (summary of a report on historical trends in finfish in Mount Hope Bay). The Region pointed out the dramatic decline in total finfish abundance beginning sometime around 1984 -1985 - shortly following the Station's conversion of Unit 4 to once-through cooling and the increases in thermal discharges - and noted that, while it might be "tempting" to solely focus on this decline and "conclude that the appropriate operating condition would be one that mimicked plant operations prior to that time[,] [s]everal analyses suggest that this would not be sufficient to protect the BIP. "*Id.* at 6-28.The Region c oncluded that the data indicated that even between 1972 and 1984, the finfish population had not been stable, [100] although the population had been significantly greater in size than it was after 1984-85. *Id.* at 6-28 to-29. Based on this information, the Region concluded that the effluent limitations Petitioner had proposed in its variance - which were similar to those imposed on BPS between 1970 and 1983 - were not low enough stop or reverse the finfish population trends and thus lower effluent limitations would be necessary. *Id.* at 6-29 ("historical finfish abundance trends do not support an annual heat flux equaling 28 tBTUs as being able to stop or reverse a decline in fish populations").

***47** Based on a combination of field data, laboratory data, satellite images, and modeling data, the Region concluded that Mt. Hope Bay has experienced and is continuing to experience numerous thermally-related impacts and ecosystem changes. *Id.* at 6-44,-55 to -56. According to the Region, the most obvious and least contested of these are: negative effects on the phytoplankton (i.e., absence of the normal winter -spring phytopl ankton bloom, appearance of nuisance algal blooms), increased abundance of certain animal species in the bay (i.e, increased abundance of smallmouth flounder, overwintering of striped bass and bluefish in the discharge canal, and overwintering of the cteno phore[101] *Mnemipsis leidyi*), and decreased abundance of certain fish (i.e., thermal avoidance of most of the bay by adult winter flounder). *Id.* at 6-44 to-45,-56. The Region therefore concluded that "the balanced indigenous population of fish has not been maintained in Mount Hope Bay

and that the plant's thermal discharge is a significant contributor to this problem. "*Id.* at 6-56.In other words, a ppreciable harm has resulted to the BIP, at least in part from Petitioner's existing thermal discharges; thus, Petitioner did not meet t he first regulatory test. RTC at III-16.

The Region further concluded that Petitioner's proposed variance would not si gnificantly relieve any of these impacts and would lead to additional impacts, such as "chronic toxicity to juvenile winter flounder, avoidance of large sections of the bay by juvenile flounder, and a reduced winter flounder egg hatching rate, " as well as potentially preventing the "growth of eelgrass," and "directly and indirectly depress[ing] dissolved oxygen concentrations in the bay. "*Id.* at 6-56;*accord id.* at 6-45.The Region also found that Petitioner's analysis had significant flaws that led to an unde restimate of the impacts of its proposal. *Id.* at 6-32 to -36 (describing problems the Region found in Petitioner's approach). Accordingly, Petitioner's proposed alternative effluent limitations, although reducing the level of thermal impacts, would not elim inate these impacts and thereby assure the protection and propagation of the BIP. *Id.* at 6-56; RTC at III-16. Thus, Petitioner did not meet the second regulatory test. RTC at III-16.

As summarized above, Petitioner challenges several aspects of the Region's analysis. We address these in turn.

a. *The Appropriate "Balanced Indigenous Population": Temporal Issue*

One of the key underlying disputes regarding the Region's analysis of Pe titioner's variance proposal is what population of organisms should have been considered as the relevant "BIP." As mentioned above, the Region considered both current and historic populations of organisms in Mount Hope Bay. Petitioner maintains, however, t hat the appropriate population of organisms is the one "currently occupying" the Bay.[102] Petition at 28. CLF disagrees, arguing that the app ropriate population of organisms is that which would be present but for past pollution. Rhode Island also disagrees that merely maintaining "the status quo" is sufficient under section 316(a). Petitioner further argues that the Region relied upon a hypothe tical community of fish in developing the BIP. In this section, we address the legal issue of whether the Region may only consider the curren t population of organisms in determining the BIP. We address in the next section Petitioner's related factual point concerning the population that the Region ultimately considered.

***48** The CWA does not define the terms "balanced," "indigenous," or "BIP." The regulations do, however, provide some general guidance. *See In re Pub. Serv. Co. of Ind., Inc.*, 1 E.A.D. 590, 601 (Adm'r 1979) ("[T]he regulation is in the nature of a guideline: it describes important factors to be weighted and considered, but it does not spell out an all inclusive checkli st of criteria that lends itself to rote application."). The relevant regulation defines the BIP[103] as:

> [A] biotic community typically characterized by diversity, the capacity to sustain itself through cyclic seasonal changes, presence of necessary food chain species and by a lack of domination by pollution tolerant species. Such a community may include historically non-native species introduced in connection with a program of wildlife management and species whose presence or abundance results from substantial, irreversible environmental modifications. Normally, however, such a community will not include species whose presence or abundance is attributable to the introduction of pollutants that will be eliminated by compliance by all sources with secti on 301(b)(2) of the Act; and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to section 316(a).

40 C.F.R. § 125.71(c) . This definition clearl y envisions a consideration of more than the population of organisms currently inhabiting the water body. In this vein, although it permits inclusion of certain "historically non-native species" that are currently present, it explicitly excludes certain cu rrently present species whose presence or abundance is attributable to avoidable pollution or previously-granted section 316(a) variances. *Id.* Other regulatory provisions governing section 316(a) determinations also support this interpretation. For example , the fact that the regulations allow existing dischargers to meet their section 316(a) burden of proof by showing that "no appreciable harm *has resulted* from the normal component of the discharge" (and other sources of pollutants) to the BIP "in and on the body of water into which the discharge *has been made*" is a clear indication that a comparison between past and current populations of organisms is appropriate. *Id.* § 125.73(c)(1)(i)

(emphasis added). By requiring a showing that the BIP has not been harmed by the existing discharger's prior discharges, this provision implicitly suggests that the population under consideration is not necessarily just the population currently inhabiting the water body but a population that may have been present but for the a ppreciable harm. *See Wabash*, 1 E.A.D. at 592-95 (comparing the abundance and diversity of fish species in the river before and after operation of the plant in question).

***49** The legislative history of CWA section 316(a) supports this interpretation of a BIP. According to the Conference Report: It is not the intent of this provision [i.e, section 316(a)] to permit modification of effluent limits required pursuant to S ection 301 or Section 306 *where existing or past pollution has eliminated or altered what would otherwise be an indigenous fish, shellfish, and wildlife population*. The owner or operator must show, to the satisfaction of the Administrator, that a 'balanced indigenous population of fish, shellfish, and wildlife' could exist even with a modified 301 or 306 effluent limit.

1972 Legislative History at 175 (emphasis added). This statement certainly indicates that the BIP can be the indigenous population that existed prior to the impacts of pollutants, not solely the current populations of organisms. This statement from the legislative history is also consistent with the underlying purpose of the CWA, which is "to *restore* and maintain the chemical, physical, and biological integrity of the Nation's waters. "CWA § 101, 33 U.S.C. § 1251 (emphasis added). Under Petitioner's interpretation of the BIP, a discharger who obtains a section 316(a) variance that substantially (by itself or w ith other pollutants and stressors) alters the "initial" populations of shellfish, fish, and wildlife in a water body can, five years later in a subsequent permit renewal, rely on information demonstrating that its second variance will maintain the new, but significantly degraded, populations of shellfish, fish, and wildlife to obtain the second variance. It is clear from the legislative history quoted above that such a scenario is the very situation in which a section 316(a) variance was not intended to be applicable. Such an interpretation and the resultant scenario would undermine the purpose of the Act. Instead of restoring or maintaining the Nation's waters, this interpretation would lead to their degradation. *See Pub. Serv. Co.* , 1 E.A.D. at 604 ("Section 316(a) must, like any other provision of the Act, be read in a manner which is consistent with the Act's general purposes. Consequently, § 316(a) cannot be read to mean that a [BIP] is maintained where the speci es composition, for example, shifts from a riverine to a lake community or, as in this case, from thermally sensitive to thermally tolerant speci es. Such shifts are at war with the notion of 'restoring' and 'maintaining' the biological integrity of the Nation's waters.").

Finally, we observe that, in *Public Service Co. of Indiana*, the Administrator considered an analogous argument regarding the appropriate definition of "a balanced indigenous population. " *See* 1 E.A.D. at 599 -605.In that case, the permittee argued - similarly to Petitioner's position here - that "[n]o specific 'balanced population' must be demonstrated. If the record shows the *existing popu lation* exhibits a 'balance,' the inquiry is at an end. "*Id.* (quoting the permittee's proposed findings of fact) (emphasis added). The Administrator specifically rejected this position, stating that the BIP definition cannot be read to include situations whe re the species composition has shifted. *Id.* at 604 (discussing 40 C.F.R. § 122.1 (i) (1979) (current version at 40 C.F.R. § 125.71(c))). We likewise disagree with Petitioner that the BIP may only in clude those organisms "currently occupying Mount Hope Bay " and may ignore the fact that the abundance of certain species in the Bay - in particular, smallmouth flounder, striped bass, bluefish, adult winter flounder - has been altered over the past several decades.

***50** In sum, Petitioner's interpretation of the "BIP" as encompassing only those organisms currently occupying the Bay is inconsistent with the regulations, the legislative history of section 316(a), the purpose of the CWA, and prior case law. [104] Consequently, we conclude that the Region did not clearly err in considering in its BIP analysis more th an just the population of organisms currently inhabiting the Bay.

b. *Reliance on "Hypothetical Community" of Fish*

As noted in the previous section, later in its Petition, Dominion raises a related (and somewhat int ernally inconsistent) fact-based argument regarding the Region's BIP analysis. [105] *Compare* Petition at 28 *with id.* at 42.There Petitioner alleges that the Region invented and used an arbitrary and hypothetical community of fish - the fish community that may have existed before BPS began operation - to use for measuring the impacts of BPS's thermal discharge. *Id.* at 42.Petitioner argues that the Region should have instead relied on the fish community "'next door' in Narragansett Bay," a community for which there are "reliable long-term data available."[106] *Id.* Petitioner contends that the Region rejected this approach, but then nonetheless later relied on that community of fish, "claiming that but for BPS, the fish in Mount Hope Bay would resemble the fi sh in

Narragansett Bay."[107] *Id.* Petitioner argues that the Region's approach, as well as several statements related to this issue that were made by the Region in its Response to Comments, are inconsistent.

The Region responded to comments challenging its use of a "hypothetical community of fish" in its Response to Comments document. RTC at III-4 to-6. In particular, the Region explained both the legal and biological basis for its BIP determination, and why it used such an analysis instead of relying solely on the current ecological conditions in Narragansett Bay.[108] *See id.*; *see also id.* at III-12,-14 to -16, IV-64 to -65. The Region also stated that it did not believe Narragansett Bay to be unaffected by BPS's discharges, noting among other things that "the plant's thermal plume reaches into Narragansett Bay under some tidal conditions." *Id.* at III-6; *accord id.* at III-12,-17; *see also id.* at III-19 to-20 (comparing temperatures in the two bays), IV-48 (discussing potential water and larval exchange between the two water bodies). Significantly, by indicating an impact on Narragansett Bay by BPS, this statement clearly contradicts Petitioner's claims that the Region had found that "but for BPS, the fish in Mount Hope Bay would resemble the fish in Narragansett Bay." Petition at 43. Upon reviewing the Region's responses to comments that Petitioner cites, we see no inconsistency in the Region's analysis.[109] Accordingly, we do not find that Petitioner has demonstrated that the Region clearly erred as a factual matter in determining the BIP for Mount Hope Bay or in not relying solely on the fish communities in Narragansett Bay in making this determination.

c. Allegations That the Region Relied on Unsupported Assertions

***51** Petitioner also claims that the Region's reasons for rejecting Petitioner's proposed variance were based on "unsupported assertions." DEBP Reply at 5. Petitioner discusses several findings made by the Region that allegedly had no basis and provides brief rebuttal arguments regarding them. *Id.* at 5-7 (citing several statements in the Region's brief).

First, with respect to Petitioner's claims that the Region relied on "unsupported assertions," we find this argument disingenuous. As evidenced by our summary of the Region's analysis of Petitioner's variance proposal above, *see supra* Part VI.A.2.b.ii, the Region performed an in-depth analysis of the section 316(a) standard and of the relevant scientific data as applicable to Petitioner's proposed effluent discharges into Mount Hope Bay. More particularly, regarding the "unsupported assertions" upon which, Petitioner alleges, the Region has relied, we have reviewed the Region's underlying analyses and conclude that these are not "unsupported assertions" but instead are scientific interpretations and/or conclusions that the Region has made based on the available scientific studies over which it and Petitioner disagree. In fact, Petitioner's arguments on appeal, as it itself acknowledges, are repetitions of comments it submitted to the Region throughout the permit process disagreeing with the scientific conclusions the Region had drawn based on the available scientific information. *See e.g.*, Reply at 6 n.7 ("[USGen] made this point repeatedly to Region I before, during, and after the comment period on the draft permit."); *id.* at 7 ("As [USGen] has repeatedly stated, vague references to the 'temperature' or 'reach' of the thermal plume demonstrate nothing with respect to the existence, and even more importantly, the significance, of biological impacts.") (citations omitted). Thus, the issue here really boils down to a scientific disagreement between Petitioner and the Region over the appropriate interpretation of numerous studies in the administrative record.

For example, one alleged "unsupported assertion," according to Petitioner, is the Region's statement that "'research indicates that the temperature and reach of BPS's thermal discharge plume would be capable of causing' effects on fish spawning, reproduction and migration." DEBP Reply at 5 (citing Reg. Suppl. Resp. at 7). As pointed out in the Region's brief, however, the Region's position is that:

> [R]esearch indicates that the temperature and reach of BPS' thermal discharge plume would be capable of causing fish to avoid key spawning and nursery habitat, of decreasing hatching success and larval survival in winter flounder, Ex. 4 at Ch. 6: 34-38: Ex. 2 at Ch. III: 18-19, 33-34; Reg. 1 Resp. at Table 1 at 8-9, 10-11, of prompting burrowing and cessation of feeding by winter flounder, Ex. 2 at Ch. III: 28-29, of interrupting migration by various species [citing to a footnote that lists several pages of scientific discussion in the Region's Determinations Document and in the Response to Comments document], and of causing secondary ecological effects such as increased predation on winter flounder eggs by sand shrimp. Ex. 2 at Ch. III: 10-11, 18-19.

***52** Region Br. at 7-8. Thus, a quick look at the so-called "unsupported assertions," which contain multiple citations to the administrative record, suggests that there is an underlying basis for the assertions. Upon taking a closer look at the actual pages cited by the Region in support of its "assertions," it is clear that the Region's statements are, in fact, the scientific conclusions it has made based on numerous scientific studies, charts, and other materials, it has reviewed. For example, pages 34-38 of Chapter 6 of Exhibit 4 (which is the Region's Determinations Document) contain a discussion of the major points of disagreement between several EPA and outside Agency reviewers and Petitioner over a number of scientific studies dealing with the temperature effects on fish, as well as EPA's final conclusions (and underlying reasons) with respect to the appropriate temperature thresholds the Agency ultimately used in establishing the thermal effluent limitations. *See* DPDD at VI-34 to-38. Plainly, then, Petitioner's real issue is with scientific interpretations and/or conclusions that the Region has made based on the available scientific data, with which Petitioner disagrees.

As we discussed earlier, the Board traditionally accords substantial deference to the permitting agencies with respect to technical as well as scientific issues. *See supra* Part IV. Thus, we have observed:

> [W]hen issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter. In cases where the views of the Region and the petitioner indicate bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the Region.

In re NE Hub Partners, L.P., 7 E.A.D. 561, 567 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999); *accord In re Peabody W. Coal Co.*, CAA Appeal No. 04-01, slip op. at 16-17 (EAB Feb. 18, 2005), 12 E.A.D. ___. More specifically, when presented with technical issues on appeal, "we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record. "*In re Gov't D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *accord In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *NE Hub*, 7 E.A.D. at 568. The Region's rationale for its conclusions must be adequately explained and supported in the record. *Moscow*, 10 E.A.D. at 142; *NE Hub*, 7 E.A.D. at 568. Here, Petitioner has not specifically addressed the alleged inadequacy of the Region's responses to comments nor presented any new rebuttal arguments in its briefs regarding these scientific issues. Thus, upon review, we have examined Petitioner's comments on the issues as well as the Region's responses in its Response to Comments document.[110] We find that the Region's conclusions were adequately explained and supported in the record. We also find that those conclusions are rational in light of the scientific information in the record. Accordingly, we conclude that the Region did not clearly err in making the scientific conclusions that Petitioner challenges.

d. *Region's Rejection of Petitioner's Proposed Variance and State WQSs*

***53** In challenging the Region's denial of its proposed section 316(a) variance, Petitioner includes a brief argument claiming that the Region misinterpreted state WQSs in rejecting Petitioner's proposal.[111] *See* Petition at 27-28 (containing a section entitled "Region I * * * Misinterprets Water Quality Standards in Rejecting the Permittee's Proposed Variance"). Upon reviewing Petitioner's comments to the Region concerning the Region's denial of Petitioner's requested section 316(a) variance, *see* BPS Comments on Draft Permit at 46-50,[112] we do not find that Petitioner raised this particular issue in its comments on the Draft Permit.[113] As we stated earlier, in order to preserve an issue for appeal before the Board, the petitioner must first demonstrate that all reasonably ascertainable issues and all reasonably available arguments supporting a petitioner's position were raised by the close of the comment period as required by the NPDES procedural regulations.[114] *See supra* Part IV. Accordingly, because Petitioner failed to raise this issue in its comments on the Draft Permit, we will not consider it further on appeal.[115]

e. *Other Arguments*

The remainder of Petitioner's arguments are sufficiently unconvincing as to requi re little response. Petitioner's assertion that the Region had suggested that Petitioner must demonstrate that "the Station's reduced discharges will not 'delay' the possible recovery of fish species no matter what the cause of their current decline, " Petition at 28, is simply a mischaracterization of the Region's statements,[116] *see* RTC at III-7 to-8,-42, as is Petitioner's statement that the R egion had suggested that Petitioner must "sufficiently offset losses from other sources so as to allow for commercial fishing to return to Mount Hope Bay. "[117] Petition at 28. With respect to Petitioner's argument that it should not have to demonstrate that "its discharge will have no measurable effect " on the BIP, Petitioner does not cite to where in the administrative record the Region made s uch a statement. This argument appears to be an issue of semantics, [118] as does Petitioner's argument that the Region erred in denying a variance based on the conclusion that Petitioner "'has contributed to the failure to maintain ' the population."*Id.* at 28 n.26 (quoting RTC at III -6).[119] Accordingly, we do not find that Petitioner has demonstrated that the Region clearly erred in its responses to comments on these issues.

f. Conclusion

Upon review of the administrative record, we do not find t hat the Region clearly erred in concluding that Petitioner failed to demonstrate that its proposed thermal effluent limitations met the section 316(a) standard. None of the arguments put forth by Petitioner in its petition or subsequent briefs convince us otherwise. Accordingly, we will not remand the permit based on this issue.

3. *Issues Surrounding the Section 316(a) Variance Ultimately Set by the Region*

a. *Participants' Arguments*

***54** Petitioner's final CWA sectio n 316(a) challenge is to the variance the Region ultimately established (i.e., an annual discharge limit of 1.7 tBTUs). Petition at 29 -33. Petitioner generally argues that the Region's variance is erroneous and arbitrary, is unsupported by the record, and has no rational basis. *Id.* at 29; *see also* DEBP Suppl. Br. at 8 -22 (claiming thermal limits set in permit are arbitrary); DEBP Reply at 5, 7 -11 (arguing that variance is based on unsupported assertions). In Petitioner's view, the Region "erroneously ignored substantial evidence in the record that compels a different analysis."DEBP Suppl. Br. at 8; *see also* Petition at 29. Furthermore, Petitioner contends that the Region failed to meet its burden of proof in establishing these permit limits - the burden of pr oving that the variance it granted was the least stringent possible while still maintaining the BIP of the Bay. DEBP Suppl. Br. at 5, 9; *see also* DEBP Reply at 7 n.10; Oral Arg. Tr. at 14-15 (Petitioner explaining that it believes the Region has the burden to ensure that such variance is the least stringent variance possible).[120]

More particularly, Petitioner claims that the Region failed to conduct a biological assessment supporting the Permit's thermal limits. *See* Petition at 30; DEBP Suppl. Br. at 8. Instead, Petitioner alleges, the Region selected arbitrary values for critical factors underlying the selected variance - the temperature thr eshold (24 °C in the summer), the percentage of the Bay's bottom that may not exceed that temperature (more than ten percent), and the maximum number of times per month that exceedances of the temperature in more than ten percent of the Bay would be allowed (five days per month). Petitioner also argues that the Region failed to connect these parameters to the effluent limits established in the permit. [121] Petition at 30-32; *see also* DEBP Reply at 7-9. Thus, according to Petitioner, there is no biological basis in the record for these values. Petition at 29-32.

Petitioner also alleges certain specific procedural deficiencies related to some of t hese factual issues. First, in its Petition, Dominion generally claims that the Region failed to respond to "detailed, extensive comments submitted by the Permittee and numerous scientists on the Draft Permit. "[122] *Id.* at 29.In its supplemental brief, Petitioner more particularly claims that the Region provided no real response to the comments Petitioner submitted regarding the selection of the 24°C cutoff value; instead, the Region provided "'high handed and conclusory ' response[s]" in its Response to Comments document. [123] DEBP Suppl. Br. at 17 (quoting *Chem. Mfrs. Ass'n v. EPA* , 28 F.3d 1259, 1265 -66 (D.C. Cir. 1994)); *see also* Petition at 29, 31. Petitioner also argues that, although the Region "states that its 'analyses' indicate that 5 days was a reasonable measure, " the Region "neither identifies nor produces those analyses. "DEBP Suppl. Br. at 32 (quoting RTC at III -30). Third, in its Reply Brief, Petitioner raises a procedural concern regarding a map upon which the Region a llegedly relied to develop the ten

percent limit. *See* DEBP Reply at 8 (citing Reg. Suppl. Resp. at 15 n.20). Petitioner asserts that the Region did not make clear the importance of the map until the permit was on appeal. *Id.* Petitioner claims, moreover, th at based on the map's date, it "could not have been relied on by Region 1 in preparation of the draft permit."*Id.*

***55** Petitioner also raises several other concerns about the Region's biological analysis, essentially chal lenging the general approach the Region took in performing its analysis. Petition at 32 -33; DEBP Suppl. Br. at 10-11; Reply at 10. In connection with this argument, Petitioner claims that there were only two analyses in the administrative record that focus ed on the incremental effects of BPS's thermal discharge and neither of them support the Region's variance limits; instead, they support Petitioner's proposed variance. DEBP Suppl. Br. at 12. Petitioner also contends that, as it and "a host of marine biologists" stated in comments on the Draft Permit, the Region should not have used the areal extent of the thermal plume to make biological conclusions. Petition at 32. Instead, variables affecting fish behavior, and in particular, acclimation, shou ld be considered. *Id.* at 32-33; DEBP Reply at 7. Petitioner also argues that the Region did not base its assessment on the BIP in Mount Hope Bay; rather, the Region analyzed only two species in the Bay and based its decision on one of them (winter flounder). DEBP Sup pl. Br. at 10. Petitioner further contends that the Region's reliance on winter flounder in the summer months, when they are allegedly not in the Bay, is not justified. *Id.* at 12.Petitioner also argues that the Region erroneously found that BPS's thermal discharges are delaying the recovery of eelgrass.[124] Petition at 44. Petitioner additionally alleges that the Region admitted to several erro rs it made in the determinations supporting the Draft Permit - i.e., regarding fish abundance trends and the effects on juvenile flounder of prolonged exposure to heat - but failed to correct these errors in its analyses supporting the Final Permit. *Id.* at 45.

Finally, Petitioner alleges that the Region improperly relied on water quality standards to justify its variance and, in fact , applied Massachusetts' mixing zone requirements "by simply renaming them a variance. "[125]*Id.* at 27 -28;*see also* DEBP Suppl. Br. at 9. Petitioner argues that this approach is wrong because a section 316(a) variance "trumps and replaces otherwise applicable water qu ality standards for temperature, " Petition at 28; *accord* DEBP Suppl. Br. at 20 -22, and that section 316(a) "override[s] application of absolute, numeric water quality standards and fixed technology standards in favor of a flexible evaluation," Petition at 30.

In response to Petitioner's general assertions, the Region argues that it did not err in setting the Permit' s thermal discharge limitations and that these limitations have a rational basis and are consistent with applicable law, Agency guidance, and record evidence. Response at 75; Reg. Suppl. Resp. at 3 -4. The Region acknowledges that it must show that the Perm it limits it set "are necessary and sufficient to assure the protection and propagation of the BIP, " and that it did so.[126] Response at 75. The Region then contends that "arguments by Petitioner that Region 1's limits are *too stringent* cannot establish that the Region failed to carry its burden of setting limits *stringent enough* to assure protection and propagation of the BIP. "[127] Reg. Suppl. Resp. at 11.

***56** As to the more specific, fact -based arguments raised by Petitioner, the Region re sponds that its analysis was reasonable and adequate under CWA section 316(a) and states that its variance was even analyzed by two independent experts, both of whom supported the variance. Response at 76; *see also* Reg. Suppl. Resp. at 4 -5, 10-20 (arguing why the Region's various analyses were "reasonable"). The Region also notes that the statute and regulations "do not dictate an exact methodology or exactly what type of information must be used " in making a CWA section 316(a) determination. Response at 76 . In several places, the Region maintains that the factual disputes, in effect, boil down to a dispute among scientific viewpoints. *See id.* at 71, 76, 79.The Region also asserts that Petitioner's suggestion that MA DEP agrees with Petitioner on some of the se scientific points is false. *Id.* at 77 n.54. The Region also raises procedural concerns with Petitioner's reliance on a MA DEP memorandum that is outside the administrative record. *Id.*

The Region claims that it reasonably set the thermal discharge limi ts pursuant to CWA section 316(a) by utilizing an "area-impacted" analytical approach that has been long supported by the Agency. Reg. Suppl. Resp. at 12. According to the Region, critical temperatures were evaluated for 26 species of finfish and were late r "ultimately keyed " to the critical temperatures identified for the most sensitive species, the winter flounder. *Id.* at 11.The Region asserts that its selection of critical threshold numbers and its choice of the allowable areal and temporal extent to the impact were "soundly based in the scientific literature."Response at 77 -79. Furthermore, the Region contends that its use of single temperature thresholds "is a reasonable approach that adequately takes [incremental effects] into account consistent with t he limits of scientific

knowledge."*Id.* at 78.The Region also avers that it carefully considered the concept of acclimation, despite Petitioner's claims to the contrary. *Id.* at 79.

The Region notes as a procedural matter that some of Petitioner's "scientific arguments attacking the manner in which the Region evaluated and set thermal discharge limits " under section 316(a) are new arguments that were not presented on the Draft Permit or are repetitions of comments already responded to by the Region in the R esponse to Comments document. *Id.* at 75.Additionally, the Region argues that it did respond to Petitioner's comments, referring to the Response to Comments document. *Id.* at 75-76.

Finally, regarding Petitioner's claims that the Region improperly relied o n state WQSs in justifying its variance, the Region flatly denies that it applied such standards and called it a variance. *Id.* at 74.According to the Region, EPA interprets CWA section 316(a) to authorize the Agency to grant a thermal variance from both th e technology-based and water-quality based requirements of the Act, *id.* at 15, and such is the case here, *id.* at 74.The Region also points out that the Permit's variance limits are less stringent than would have been required by technology or WQS -based req uirements; thus, although the alternative variance was more stringent than Petitioner's request, it was less stringent than the non -variance limits. *Id.* at 11.Furthermore, the Region asserts that Petitioner did not raise this argument in its comments on th e Draft Permit and therefore has not preserved it for appeal. *Id.* The Region maintains that Petitioner, in fact, made the opposite argument in its comments. *Id.* (citing RTC at V-1).

***57** MA DEP generally agrees with EPA's position on these issues. MA DEP states that EPA determined, and it concurred, that the variance ultimately granted, i.e., the Permit's discharge limits, are "both necessary and sufficient " to assure the protection and propagation of the BIP, thus meeting the statutory standard. MA Br. at 4; *see also* MA Suppl. Br. at 14. MA DEP disputes Petitioner's allegations that the Region, in actuality, turned Massachusetts' mixing zone evaluation criteria in to the variance. MA Suppl. Br. at 13 -15. MA DEP argues that the variance was based on the BIP standard. *Id.* MA DEP further contends that, had the Region used the mixing zone evaluation, the Permit would have been more stringent than the variance that was actually granted.[128]*Id.* at 14;*see also* MA Br. at 4 n.5. MA DEP also notes that some of the documents Petitioner has cited regarding the mixing zone evaluation actually suggest that the temperature EPA selected (i.e., 24 °C) was too high, not too low. MA Suppl. Br. at 15 n.9.

As discussed above, *see supra* Part VI. A.2.a., in its initial brief Rhode Island generally argues that the Region did not misapply state WQSs, R.I. Br. at 4 -10, and that such standards should be weighed against "any ultimate determination as to whether a variance was available to BPS, "*id.* at 10.In its supplemental brief, Rhode Island focuses on rebutting Petitioner's assertions that the Region's determinations were arbitrary and not supported by the record. *See* R.I. Suppl. Br. at 8-14. Rhode Island points to various studies that, it alleges, provide record support for the Region's variance. *Id.* Rhode Island also points out that one of Petitioner's studies is a new, extra -record study and requests that the Board, should it consider Petitioner's extra-record documents, also consider an extra -record rebuttal memorandum by one of Rhode Island's scientists. *Id.* at 11 & nn.4-5.

Two of the environmental groups that specifically address the final variance granted by the Region - CLF and KRC - question whether the variance granted by EPA complies with the BI P standard and state WQSs. CLF Br. at 3, 6 -17; CLF Suppl. Br. at 27-34; *see also* KRC Br. at 3, 7-8. CLF specifically challenges the permit as issued.[129]*See* CLF Br. at 17, 18-19; CLF Suppl. Br. at 34. Arguing that the state WQSs apply, CLF contends, as seemingly does KRC, that the final variance does not meet the state standards[130] and thus does not meet the section 316(a) standard. CLF Suppl. Br. at 28, 32 -34; CLF Br. at 7-17; *see also* KRC Br. at 3, 7-8 (suggesting that the permit limits are not stringent enough under CWA section 401(a)(2) and requesting the Board to disallow any open -cycle cooling). According to CLF, Congress intended that EPA allow only variances of *federal* thermal effluent limitations, and therefore EPA may not waive more stringent *state* WQSs when granting variances. CLF Suppl. Br. at 32; *see also* STB Br. at 10 -12 (disagreeing with Petitioner's statements that state WQSs are trumped by a variance); *cf.* KRC Br. at 3, 7. In support of its argument, CLF points to the congressional intent underlying section 316(a), a s demonstrated by CWA legislative history from 1977. CLF Suppl. Br. at 32 (citing S. Rep. No. 95 -370 (1977)). According to CLF, the legislative history demonstrates that CWA section 510, which authorizes states to impose stricter standards and/or effluent limitations, should "trump" the variance. CLF Suppl. Br. at 32 -33; *see also* CLF Br. at 6. CLF also relies on CWA sections 401 and 301(b)(1)(C), the regulations, Board decisions, federal court decisions, and EPA

guidance in support of its position. CLF Br. at 12-17.

b. *Analysis*

i. *Burden of Proof/Zener Memorandum Issue*

***58** Petitioner contends that the Region failed to meet what Petitioner asserts is the Region's burden of proof in establishing these permit limits - the burden of proving that the variance it granted was the least stringent possible while still maintaining the BIP of the Bay. Oral Arg. Tr. at 14 -15; Petition at 27; DEBP Reply at 7 n.10; *see also* DEBP Suppl. Br. at 9 (stating that "the Agency bears the burden of demonstrating that its proposed variance -based limits are in fact necessary to protect the species of concern in this permitting process "). In support of this position, Petitioner relies on a statement in a 1973 memorandum fr om EPA's Acting General Counsel, which states that "once the permitting agency is satisfied that the proposed limits are too stringent (and it may not unreasonably withhold its satisfaction), it must proceed to consider what less onerous controls would meet the statutory standard."DEBP Reply at 7 n.10 (citing A.R. 2141, Memorandum of Robert Zener, Acting Deputy General Counsel, EPA, to Deputy Assistant Secretary for Water Planning and Standards 3 -5 (1973) [hereinafter 1973 Zener Memo]); Petition at 27 (same).

Petitioner stretches the meaning of the 1973 memorandum and appears to turn both it and the CWA section 316(a) statutory standard on their respective heads. The section of the memorandum in question here addresses the question of whether the Agency ma y "refus[e] to modify thermal effluent limitations if the applicant had presented substantial evidence that the proposed limitations are excessively stringent and this evidence had not been rebutted." 1973 Zener Memo at 2-3. The Acting General Counsel conc luded that, despite the permissive language of the statute, it would be "unlikely that a court would sustain a decision by the Administrator * * * refusing to modify a proposed thermal limit if that decision was arbitrary, capricious, [or] an abuse of disc retion."*Id.* at 4. The memorandum indicates that once the otherwise applicable CWA standards are *demonstrated* to be too stringent, the Agency may not simply go ahead and require these stringent standards anyway without a legitimate, rational reason for doin g so, presuming such a reason exists. *Id.* at 3-4.However, nowhere does the Acting General Counsel's memorandum state, as Petitioner suggests, that this "consideration" must result in the least stringent variance possible. The memorandum merely suggests tha t the Agency "*consider* what less onerous controls would meet" the CWA section 316(a) standard. *Id.* at 5 (emphasis added). The memorandum also mentions that the *owner or operator* has the burden of proof to satisfy the permitting agency that its less stringe nt effluent limitations will assure the protection and propagation of the BIP. *Id.* at 3 (citing 1972 Legislative History at 263) (emphasis added). In this case, the owner or operator (i.e., Petitioner) could not meet its burden of proof. At that point, rat her than reverting to use of the more stringent technology-based standards, the Region stepped in, considered whether there were less onerous standards that could meet the statutory standard for a variance, and established a variance it concluded met the s ection 316(a) statutory standard, i.e., showed that its alternative limits would assure the protection and propagation of the BIP in Mount Hope Bay. *See* CWA § 316(a), 33 U.S.C. § 1326(a) . Moreover, in "consider[ing] what less onerous controls would meet the statutory standard, " the Region certainly performed the action contemplated by the memorandum. Unlike the situation addressed by the 1973 Zener Memo, the Region was not presented with compelling, unrebutted evidence that its proposed variance was too stringent. Petitioner points to no statutory language that supports its argument that the Region had the further burden of establishing that the permit limits were the least stringent limits possible. Thus, we are not pe rsuaded by Petitioner's arguments that the Region did not follow the approach prescribed by the 1973 Zener Memo, nor do we find that the Region failed to meet its burden of proof.

ii. *Challenges to the Region's Biological Assessment*

***59** As described above, *see supra* Part VI.A.2.b.ii, the Region performed a detailed analysis of the biological conditions in Mount Hope Bay as well as the potential impacts of BPS's thermal effluents on those conditions. The analy sis included a discussion of the Region's consideration of Petitioner's variance proposal and, upon concluding that the proposed effluent limits would not meet the section 316(a) standard, a consideration of what variance *would* meet the standard. *See* DPDD, Ch. 6. Upon review of Chapter 6 of the Determinations Document, we find, as a general matter, that the Region did perform a biological assessment. Thus, any generalized assertions by Petitioner that the Region failed to conduct a biological assessment are not accurate. *See, e.g.* , Petition at 30 (asserting that the Region selected arbitrary values "instead of

conducting a biological assessment"); DEBP Suppl. Br. at 8 (stating that "the Region's thermal limits fail because they are unrelated to, and unsupported by, *any* biological assessment") (emphasis added).

Turning to Petitioner's more particularized arguments regarding the biological assessment that was performed - i.e., challenges to the selection of the temperature threshold (24°C in the summer), the percentage of the Bay allowed to reach that temperature (ten percent), the number of times per month that such exceedances of the temperature are allowed (five), and the type of assessment performed - we observe that these challenges involve technical, scientific issues. As we have remarked previously, *see supra* Part IV, we traditionally accord substantial deference to the permitting agencies on scientific or technical matters. Thus, when reviewing scientific issues, "we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record." *In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 559 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). With this standard in mind, we consider Petitioner's arguments.

a. *Region's Approach and Analysis*

In order to find a variance that would be protective of the BIP, thereby meeting the statutory standard, the Region compared the "critical threshold temperatures" for various species - essentially the temperature above which a species demonstrates a certain level of adverse effects - with predicted temperatures in the thermal discharge plume based on different operating scenarios.[131,132] *See* DPDD at 6-37,-30,-56. Thus, one of the key factors in determining the appropriate variance at BPS was the selection of the ultimate threshold temperatures. In this case, the Region selected a maximum "summer"[133] temperature in the benthic layer[134] of 24 °C, a maximum "summer" temperature in the pelagic layer[135] of 25 °C, a maximum "winter"[136] temperature in the benthic layer of 5 °C, and a maximum "winter" temperature in the pelagic layer of 8 °C. *Id.* at 6-37 to-38. According to the record, these temperatures were generally selected based on the most sensitive species present at each location in the water column during that season and were based on "reasonable, yet protective temperature values for the most sensitive life stage of the most sensitive species."[137] *Id.* at 6-36. The "critical" temperature for a species was derived from various scientific field and laboratory studies, literature reviews, and/or personal communications from experts on the species. *Id.; see also id.* at 6-37 to -38. In selecting the critical temperatures, the Region acknowledged that it took a conservative approach and outlined its reasons for doing so.[138] *Id.* at 6-36 to-37; *see also* RTC at III-11 ("EPA chose threshold temperatures that represented an acceptable level of impact but did not represent a zero impact temperature."); *cf.* DPDD at 6-10 to-11 (explaining legal basis for taking a conservative approach in granting variances).

***60** After selecting temperature thresholds, the Region "estimated the volume of the bay that would exceed these critical threshold temperatures and the duration of the exceedance for various thermal discharge scenarios." DPDD at 6-38. Thermal discharge scenarios the Region particularly looked at included Petitioner's proposed variance (the "Enhanced Multi-Mode Option"), discharges similar to current conditions ("MOA II"), two hypothetical discharge scenarios ("Hypotheticals A and B"), and the "No Plant" scenario. *See id.* at 6-39. The Region presented several charts setting forth the estimated percentage of the water volume that would exceed the threshold temperatures for one to four days and for greater than five days during each season for each layer of the water column. *See, e.g., id.* at 6-39, tbl. 6.3-2 (showing "Percent of Bottom Water Volume Less Than, Equal to or Greater Than a Daily Mean Temperature of 24°C in Warm Summer Conditions").

According to the Region, the most critical temperature exceedances were in the benthic layers. *Id.* at 6-39 to-42,-56. The Region, in fact, concluded that, with respect to the summer benthic layer analyses, "all of the modeled scenarios represent significant degradation to juvenile winter flounder in Mount Hope Bay as a result of habitat alteration by [BPS's] thermal discharge" during a warm summer.[139] *Id.* at 6-39. The winter benthic layer analyses led to the conclusion that, for a warm winter, "100% of the volume of the bottom water exceeds the critical temperature of 5 °C under all modeling scenarios," even the "No Plant" scenario. *Id.* at 6-41. Further, with respect to the summer pelagic layer, the Region concluded that the only scenario that "represent[ed] an acceptable area of impact" was Hypothetical A.[140] *Id.* at 6-40.

Ultimately, the Region selected a discharge that would "ensure that no more than 10% of the bay exceeds 24 °C for more than 5 days per month." *Id.* at 6-56. Relying on a map showing the habitat of juvenile winter flounder, the Region determined that, because "juvenile winter flounder inhabit shallow sandy subtidal areas that predominate in the northern portion of the bay[,]

* * * a large thermal plume would dramatically effect the amount of juvenile habitat available. "*Id.* at 6-56 to-57. Thus, according to the EPA, "a greater than 10% areal impact of the bay would not preserve sufficient juvenile habitat in the summer to allow for [their] recovery. "*Id.* at 6-57.The Region also found that, with respect to the winter discharges, "the lower portion of the rivers that feed into Mount Hope Bay are likely important spawning areas for winter flounder in Mount Hope Bay. These spawning locations tend to be in the northern portion of the bay in close proximity to the discharge canal and are susceptible to large thermal plumes."*Id.* For this and several other reasons set forth in the Determinations Document, the Region concluded that "a significant reduction in heat is required for this portion of the year as well. "*Id.* Using a mathematical equation, the Region "back calculated" that allowing no more than ten percent of the bay to exceed 24 °C for more than five days per month in the summer resulted in a thermal discharge limit of 0.14 tBTU per month; a similar approach was taken for the winter. *See id.* at 6-56 to-57.

b. *Selection of Cutoff Temperature (24°C)*

***61** In its Petition and supplemental briefs, Dominion challenges the selection of the 24 °C temperature threshold, arguing that it is "patently arbitrary."[141] DEBP Suppl. Br. at 12 -20; *accord* Petition at 31 -32; Reply at 9. Petitioner claims that the Region relied on three documents in the recor d for this determination - a 1982 article by Casterlin and Reynolds; a comparison of winter flounder abundance to temperature prepared by RI DEM; and a 1978 literature survey by Duffy and Lüders - and asserts that "one does not need a degree in biology to appreciate that not one of these documents actually supports Region I's position. "DEBP Suppl. Br. at 13. Petitioner describes numerous alleged scientifically -based problems with the selection of the 24 °C temperature threshold, *id.* at 12-17, and argues that 24.9°C is "the lowest temperature for which there is any record support at all,"*id.* at 16.Petitioner further argues that all of these alleged problems were raised in the comments, but that the Region failed to address them in a meaningful manner. *Id.* at 17.

As a preliminary matter, it is important to recognize that the studies in dispute here do not provide one definitive cutoff f or the temperature threshold. The Region therefore was required to make a scientific judgment based upon the available data. Thus, Petitioner's challenge to the 24 °C temperature threshold value is really a dispute between experts over the proper interpretation of several scientific studies [142] as well as an underlying dissatisfaction with the Region's use of a more conservative approach than Petitioner would prefer. *See supra* notes 138, 142; *see also infra* notes 146, 149.

Upon review of the Region's explanation for its selection of the 24 °C temperature threshold value, the comments received concerning this selection, and the Region's responses to those comments, we find that the Region demonstrated that it considered the relevant comments and ultimately adopted a rat ional approach on this issue. In its Determinations Document, the Region explained its approach in selecting the temperature threshold values as well as the reasons for its ultimate selection of 24°C as one of the values. DPDD at 6 -27 to-42,-56 to-57. As a factual matter, we note that Petitioner incorrectly claims that the Region relied on only three documents for its selection of 24°C for the summer benthic threshold temperature; in fact, we count five sources of information upon which the Region relied in its decision.[143]*See* DPDD at 6-34,-37. Moreover, the two sources that Petitioner fails to mention [144] appear to provide support for the Region's selection of the 24 °C value. In particular, the Region stated in its Determinations Document that the 1969 Olla study [145] had found that, in the field, winter flounder burrow into the bottom sediments - a type of temperature avoidance strategy - at temperatures higher than 22.2°C. DPDD at 6 -34. Notably, this study, by itself, seems to suggest that the temperature threshold could have been lower than 24°C. The Region also relied on the statements of Dr. Klein -MacPhee, a flounder expert at the University of Rhode Island, who, the Region explains, averred that flounder sublethal effects begin at 20 °C.[146]*Id.* at 6-37; RTC at III -28. With respect to the three studies about which Petitioner raises concerns, the Region explained that RI DEM field data "suggests that flounder response to water temperature is fairly dramatic " in Mount Hope Bay, and that juvenile flounder abundance drops fairly dramatically when water temp erature exceeds 24 or 25 °C. DPDD at 6 -24. The Region further explained that the field data "agrees with reported temperature thresholds found in the scientific literature, " in particular, that "Duffy and Lüders (1978) and Casterlin and Reynolds (1982) both found that juvenile winter flounder showed avoidance at 24 °C."*Id.; see also id.* at 6-37 (relying on and referring back to this data).

***62** In several places in its Response to Comments document, the Region responded to a number of comments it received challenging its approach to selecting temperature threshold values and its selection of the 24 °C value.[147]*See, e.g.*, RTC at III-9 to-11,-27 to-29,-31 to-33. While perhaps some of its responses were shorter than some of the comments themselves, this is

not necessarily fatal.[148] We have stated previously that the regulation governing response to comments in a permit proceeding only requires that the Region "[b]riefly describe and respond to all significant comments. "40 C.F.R. § 124.17(a)(2); *accord In NE Hub Partners, L.P.*, 7 E.A.D. 561, 583 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). The regulation does not require the Region "to respond to each comment in an individualized manner, " nor does it require that "the Region's response be of the same length or level of detail as the comment. "*NE Hub*, 7 E.A.D. at 583;*see also In re Hoechst Celanese Corp.*, 2 E.A.D. 735, 739 n.7 (Adm'r 1989) ("Once the Agency has reached a reasonable and legally proper permit decision based on the administrative record, it need not provide detailed findings and conclusions, but instead must reply to all significant comments * * * as required by 40 C.F.R. § 124.17."). As we explained in *NE Hub*, a case similar to this in the amount and complexity of the comments on the draft permit:

> The response to comments document must demonstrate that all significant comments were considered, even if the Region ultimately disagrees with the substance of the comments. The Region's obligation to respond to comments is no different even when faced with "hundreds of pages of written submissions and hours of oral comments " as were supplied by Petitioners in this case. The mere quantity of comments does not dictate the manner in which the Region must respond, nor does it indicate a need for changes in a draft permit. The fact that the Region adopted none of Petitioners' comments on these permits is not in itself indicative of error, especially when the comments were primarily technical in nature and raised issues subject to genuine disagreement by experts.

7 E.A.D. at 583. The Region clearly addressed the question of, and contrasted its temperature selection method with, Petitioner's method. RTC at III -9 to-11. The Region later specifically discussed the reason it selected 24 °C, discussing the merits of the field and laboratory studies, explaining why it thought the Olla study was relevant, and reiterating its reliance on Dr. Klein-MacPhee's statement, as well as stating that it disagreed with Petitioner's consultants on the interpretation of the Casterlin and Reynolds and Duffy and Lüders studies. RTC at III -28 to -29. We thus find that the Region satisfied its obligation to "duly consider the issues raised in the comments. "[149] Moreover, even if we were to find that the Region did not respond to comments about one specific study, this would not be fatal as the Region's rationale for selecting the 24 °C temperature threshold value was well supported by several studies, not just one.[150]

***63** Furthermore, we have also stated that where "an issue is raised only generically during the public comment period, the permit issuer is not required to provide more than a generic justification for its decision, and the petitioners cannot raise more specific concerns for the first time on appeal. "*In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 251 n.12 (EAB 1999); *accord In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 147 (EAB 1999) (stating that issues raised in a general manner only warrant general justifications from the permit issuer); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230-31 (EAB 2000). Comments raised with respect to the Casterlin and Reynolds study fall within this category. Petitioner stated in its comments that "EPA's position is not supported by the studies it cites. * * * Nor do[es] * * * Casterlin and Reynolds (1982) suggest that winter flounder avoid water temperatures greater than 24 °C."BPS Comments on Draft Permit, vol. I, attach. 4, at 15. Petitioner's other comments referencing this study were likewise general in nature. *See id.*, vol. I, at 60. Comments from LMS were slightly more detailed. LMS summarized the study results and then stated that "the upper end of the temperature range is well above the 24 to 25 ° limit suggested by EPA. "*Id.*, vol. II, Tab 11, at I-6 (LMS Response to EPA MA0003654 Determinations) [hereinafter LMS Comments on Permit]. The Region's general response to these general comments was that it "disagrees with the permittee on the characterization of the * * * Casterlin and Reynolds (1982) paper[] and maintains that the[] paper[] support[s] an avoidance temperature of 24 °C."[151] RTC at III -29. We find that the Region's response to these comments was sufficiently responsive in view of the general nature of the comments, and Petitioner may not raise more specific concerns in its appeal.

We also find that the Region satisfied its obligation under 40 C.F.R. § 124.17 to respond to all significant comments through its Response to Comments document. Although the Region's responses were short in comparison to Petitioner's (and its consultant's) comment documents with respect to comments on certain studies, and the response document did not provide individual responses to each and every comment, the Response to Comments document succinctly addressed the essence of each issue raised by Petitioner. This approach is acceptable, especially in light of the call for brevity in the regulation. The Region need only "'articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions,"' which it has done. *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417 (EAB 1997) (quoting *In re Carolina Power & Light Co.*, 1 E.A.D. 448, 451 (Acting Adm'r 1978)). Moreover, the Region's decision to group related

comments together and provide one unified response for each issue raised was an efficient technique, not an indication of unresponsiveness. Similar to our conclusion in *In re NE Hub Partners, L.P.* , we conclude that the state of the Response t o Comments document in this case is not analogous to situations in other cases where a remand was ordered for failure to provide an adequate response to one or more significant comments. 7 E.A.D. 561, 58 3 (EAB 1998) , *review denied sub nom.Penn Fuel Gas, Inc. v. EPA* , 185 F.3d 862 (3d Cir. 1999) ; *cf. In re Atochem N.A., Inc.* , 3 E.A.D. 498, 499 (Adm'r 1991) (remand ordered due to Region's wholesale failure to respond to one set of comments submitted by the petitioner); *In re McGowan*, 2 E.A.D. 604, 606 (Adm'r 1988) (remand ordered due to Region's "total lack of a response " to petitioner's comments; document containing conclusion without supportive reasoning is not adequate response). We find no clear error in the Region's Response to Comments document.

***64** Finally, based on our review of the administrative record, we find that the Region provided a reasonable rationale for its approach in selecting temperature threshold values and in its ultimate selection of the temperature threshold values, which notably were within the range of the reported values in the scientific studies it considered. The studies the Region relied on in its selection of a temperature threshold value of 24 °C show a range of avoidance temperatures from 22.2 ° to somewhere "at or below 27°C."[152] Furthermore, considering other effects such as feeding inhibition and sublethal effects, the studies suggest that the temperature threshold range c ould even be lower than 22.2 °C.[153] The Region clearly indicated that it intentionally took a conservative approach in developing this value, in part because the section 316(a) standard for granting variances from otherwise applicable requirements requires the protection and propagation of a BIP. *E.g.*, RTC at III-11,-34. We see no clear error in its decision to take a relatively conservative ap proach. Petitioner has not persuaded us of any clear errors in the Region's analysis. Consequently, we do not find that the Region clearly erred in selecting the temperature threshold values.

c. *Selection of Percentage of Bay Impacted (Ten Percent)*

Petitioner also challenges as arbitrary and without record support the Region's selection of ten percent for the percentage of Mount Hope Bay for which the temperature may exceed 24 °C for up to five days per month. Petition at 30, 32; DEBP Suppl. Br. at 12; Reply at 7 -8. Petitioner further argues that the Region's alleged reliance on a map dated three months after the Draft Permit's issuance (and first appearing a year after the Draft Permit was issued) for the calculation of the ten percent value is a post -hoc rationalization for the Region's decision. Reply at 7 -8. More particularly, Petitioner asserts that the Region, in its briefs responding to this appeal, "expressly states that it was this assessment [presumably the map], and *not* a prior 'selecting' of 1 0 percent, that led to the Permit's limits. "*Id.* (citing Region Suppl. Br. at 15 n.20). Petitioner contends that it did not realize the importance of said map until it was cited by the Region in its supplemental brief. *Id.* Petitioner claims that the map "first appeared" after the comment period ended, attached as an exhibit to the Response to Comments document, and furthermore, that it was unaccompanied by any explanation of its significance. *Id.* Moreover, according to Petitioner, a footnote description of the map indicates that it was created three months *after* the Draft Permit was issued and thus after the comment period closed. *Id.* Based on this information, Petitioner concludes that the map "could not have been relied on by Region I in preparation of the draft permit."[154] *Id.*

***65** The map in question ("the 2002 map"), which was submitted with the Region's supplemental response and was included in the Region's October 2003 Response to Comments document as part of a series of figures at the end of the document, *see* RTC, Fig. 13, is a diagram of Mount Hope Bay and its tributaries. Region Suppl. Resp., Ex D. It contains a series of circled numbers as well as several letters that are written along the various tributaries. *Id.* These are apparently sampling stations. *See* A.R. 415, at F.158; *see also infra* notes 156, 158. The figure also has a shaded circle whose center appears to be BPS. *See* Region Suppl. Resp., Ex D. The 2002 map states that it was revised from an assessment presented at a meeting in October 2002.[155] *Id.* The 2002 map is very similar to one of the attachments to a 1998 Annual Report on BPS prepared by PG&E Generating and Marine Research Institute ("MRI") and submitted to the Agency by BPS. *See* A.R. 415, at F.165. This earlier map was entitled "Location of young -of-the-year beach seine stations in Mount Hope Bay tributaries " ("the 1998 map").[156] *Id.* The major difference between the two maps, besides their titles, is that the 1998 map does not contain the shaded circle. *Compare id. with* Region Suppl. Resp., Ex D.

Upon review of the administrative record, we conclude that the Regi on did provide a rational explanation for its selection of the ten percent areal limit, contrary to Petitioner's claims of arbitrariness. Furthermore, the record shows that the Region did not actually rely upon the 2002 map at issue here to develop its ten percent limit, although the final version of the map was

later provided as a pictorial explanation of the Region's decision.

In its Determinations Document accompanying the Draft Permit, the Region stated that "[j]uvenile winter flounder inhabit shallow sandy subtidal areas that predominate in the northern portion of the bay." DPDD at 6-56 (citing *Final 316(a) and (b) Demonstration* vol. I., app. B, at B-98). The Region's observations were based on a map delineating juvenile and adult winter flounder habitat in Mount Hope Bay that had been submitted by the permittee.[157] *See id.* The Region therefore concluded that "a large thermal plume would dramatically [a]ffect the amount of juvenile habitat available," and consequently determined that "a greater than 10% areal impact of the bay would not preserve sufficient juvenile habitat in the summer." *Id.* at 6-56 to-57.

In response to comments asserting that the Region had failed to offer any biological justification for the ten percent areal compliance cutoff it used, the Region amplified on the discussion in the Determinations Document in a longer and more detailed explanation in the Response to Comments document. RTC at III -30 to -31. The Region first explained that, in determining the maximum area of impact that would allow for protection and propagation of the BIP, it had relied on the advice of the 1977 draft section 316(a) guidance document. RTC at III-30. According to the Region, this guidance "advocates avoiding thermal impacts on spawning and nursery habitat and generally minimizing the areal extent of thermal impacts to the extent possible." *Id.* The Region maintained that the biological benefits of avoiding thermal impacts on spawning and nursery habitat in the Bay would be "substantial," but also acknowledged that they were difficult to quantify especially in light of data gaps. *Id.* The Region went on to explain that it used the best information available to determine the location of the winter flounder spawning and nursery habitat, such as published studies regarding spawning area preferences and "the location of winter flounder nursery areas identified by the MRI winter flounder young-of-the-year beach seine survey."[158] *Id.* at III-30 to-31. Relying on hydrothermal modeling,[159] the Region further explained:

> ***66** A thermal plume from BPS that meets EPA's proposed permit limits [and thus uses the ten percent areal cutoff] would have minimal overlap with winter flounder nursery habitat identified by MRI (1999) in the lower Taunton, Cole, and Kickamuit Rivers. EPA determined that it would not be possible to significantly minimize impacts on winter flounder spawning habitat in the Lee River without virtual elimination of the thermal discharge because of the proximity of the discharge canal to that river. However, by focusing on preserving winter flounder nursery habitat in the lower Cole, Kickamuit, and Taunton Rivers, EPA found that allowing a thermal impact of 10 percent of the bay, or 1.4 square miles, would spare the majority of those habitat areas. EPA concluded that although this level of protection would not eliminate all adverse effects from BPS thermal discharges, it should be sufficient to reasonably assure the protection and propagation of the BIP in and on Mount Hope Bay. The Agency could not reasonably reach that conclusion with significantly less stringent limits.

Id. at III-31. Notably, at the end of its response to this comment, the Region specifically cited to MRI's 1998 Annual Report. *See id.* Although the updated version of MRI's map containing the shaded thermal impact circle was included as one of the attachments to the Response to Comments document, the Region did not explicitly cite to the attachment in its discussion of this particular comment. *See id.* Nor can we find an explanation of the figure in the Response to Comments document. In fact, the only clear explanation of the significance of the 2002 map is contained within the Region's supplemental brief.[160]

As evidenced by our summary and contrary to Petitioner's assertions, the Region did provide a rationale for its ten percent value. Although its explanation in the Determinations Document accompanying the Draft Permit was rather general, when its approach was questioned by commenters, the Region provided a much more thorough explanation in its Response to Comments document. As we have stated previously, *see supra* Part IV, when reviewing scientific issues, "we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record." *In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 559 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). Additionally, we note that while Petitioner has generally alleged that the Region's ten percent selection was arbitrary and without support, Petitioner has not presented us with any particular facts that rebut the Region's choice. *See generally* Petition at 30, 32 (arguing generally that the

Region's selection is without support or that the Region did not articulate its rationale); DEBP Suppl. Br. at 12 -13 & n.19 (also arguing generally that the Region failed to explain or support its rationale and also asserting that the Region's current arguments are post-hoc justifications); Reply at 7-8 (raising procedural challenges to the 2002 map).

***67** Furthermore, Petitioner's procedural claims regarding the 2002 map must also fail. Despite the fact that the Region relies on the 2002 map in its *supplemental brief* when describing its rationale for selecting the ten percent areal cutoff value, and even though the map was included in the Response to Comments document, upon consideration of the *administrative record*, we find that the map was not, in fact, central to the Region's decision. *See* DPDD at 6-56 to-57; RTC at III-30 to-31. As we described above, the Region relied on the best available information regarding the location of the habitat of the juvenile winter flounder in the Bay and its tributaries, which included the extensive information provided in MRI's seine study, of which the original 1998 map was a part . The 2002 map was merely a pictorial version of the descriptive information that the Region had already described in detail and upon which it relied. Thus, questions about the date on which the 2002 map was prepared and the fact that the Region failed to specifically cite to the map in its discussion of the ten percent areal cutoff value are not significant enough to warrant a remand of the permit.

In sum, we find that the Region's selection of the ten percent areal cutoff value was not arbitrary. We fur ther conclude that the Region did consider the issues raised in the comments concerning its selection of the ten percent value and that the approach ultimately adopted by the Region is rational in light of all the information in the record.

d. *Selection of Monthly Exceedance Value (Five Days)*

Petitioner likewise challenges as arbitrary and without support the Region's selection of five as the maximum number of allowable monthly exceedances. Petition at 32; DEBP Suppl. Br. at 12 -13; Reply at 7 -9. Petitioner alleges that the Region claimed that its five-day cutoff "was a reasonable measure but neither identifies nor produces those analyses. "Petition at 32; *see also* Reply at 9 (arguing that the Region's statement that the agencies "agreed" to the five-day limit does not result in the limit being reasonable). Petitioner also claims that the Region's statements that the five -day limit "'represented the least conservative time period from the modeling runs provided' by [BPS]" is not sufficient reason to support the limit because the Region failed to ask for modeling of a more reasonable range of days. Reply at 8 -9 (quoting Response at 15 n.18). We find this argument to be meritorious.

As we described earlier, *see supra* Part VI. A.3.b.ii.*a*, the Region presented several charts in its Determinations Document setting forth the estimated percentage of the water volume that would exceed the threshold temperatures for one to four days and for greater than five days during each season for several layers of th e water column. DPDD at 6 -39 to-42, tbls. 6.3-2 to 6.3-7. These calculations were performed using Petitioner's models. *Id.* at 6-38.The results indicated that, at least for several effluent scenarios, there was a significant difference in the percent volume that increased above the critical temperatures between the one-to-four-day time period and the greater-than-five-days time period. *See, e.g., id.* at 6-39, tbl. 6.3-2 (chart for the summer benthic layer showing that, for Petitioner's proposed variance, 62% of the bottom water by volume would exceed the juvenile winter flounder avoidance temperature (24 °C) for a period equal to or greater than five days and that another 18% of the water volume would reach avoidance temperatures for time periods of one to fou r days). The Region later selected five as the maximum number of days per month for which the water volume could exceed the critical temperature threshold for juvenile winter flounder in calculating the permit's limits. *Id.* at 6-56.The Region, however, did not explain in its Determinations Document precisely why it ultimately selected five days (as opposed to any other number of days, such as six or seven).[161] *See id.* The failure to provide a complete explanation in the Determinations Document is not necessarily fatal, if the Region explained its rationale more fully in its responses to comments and if its explanation is rational in light of the administrative record as a whole.

***68** Here, however, the Region did not explain its rationale more fully. In response to comments challenging the Region's derivation of this value, and in particular, challenging it as arbitrary, the Region explained that it "selected a temperature exceedance frequency of [greater than] 5 days as a measure of compliance becaus e its analyses indicated that this was the maximum frequency that would allow for protection and propagation of the BIP in Mount Hope Bay. EPA's rationale for selecting a frequency of temperature exceedance of [greater than] 5 days is discussed in greater detail elsewhere in the document."RTC at III-30. We cannot, however, locate that other more detailed response, and it is clearly the Region's burden

to provide the needed illumination on this point. The Region, however, has confined its support of the five -day selection to this very same, limited language. *See* Region Suppl. Br. at 14 n.18 (citing solely to RTC III-30). Thus, although the Region's response suggests that it has a reason for selecting greater than five days as the frequency of temperature exce edance, the Region has failed to provide more than a conclusory reason in the administrative record. This is insufficient. As we explaine d earlier, although we place a heavy burden on petitioners seeking review of scientific or technical issues, we nonethe less look at the record to see whether it demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted is rational in light of all the information in the record. *In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2002) ; *see also* discussion and additional cites *supra* Part IV. As we noted in *In re Government of District of Columbia Municipal Separate Sewer System* ,"[w]ithout an articulation by the permit writer of his analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirement of rationality."10 E.A.D. at 342; *In re Knauf Fiber Glass, GmbH* , 8 E.A.D. 121, 175 (EAB 1999) (remanding permit because "there [we]re no details regarding [the region's] determination in the administrative record " with which to "judge the adequacy of the response "); *In re Ash Grove Cement Co.* , 7 E.A.D. 387, 417 (EAB 1997) (explaining that "the [r]egion 'must articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions'" (quoting *In re Carolina Power & Light Co.* , 1 E.A.D. 448, 451 (Acting Adm'r 1978))); *In re McGowan*, 2 E.A.D. 604, 606-07 (Adm'r 1988) (finding that the "total lack of response" to the comment cannot be cured by reference to an earlier statement because that statement "merely provides a conclusion without supportiv e reasoning"); *see also* discussion and additional cites *supra* Part IV. We are therefore remanding the Permit to the Region to provide a rational explanation for its selection of five days. *See Gov't of D.C*, 10 E.A.D. at 343; *Ash Grove*, 7 E.A.D. at 418-19; *In re Broward County*, 4 E.A.D. 705, 721 (EAB 1993) . The Region should supplement the rec ord as necessary during the remand process. Alternatively, the Region may decide to modify this value. If so, the Region must provide a sufficient explanation for the ne w value. As necessary, the Region may have to reopen the record for additional public c omment in relation to the new material in accordance with 40 C.F.R. § 124.14 . If Petitioner or other participants are not satisfied with the Region's explanation on remand, Petitioner and/or others would be free to appeal this technical determination to us once all stages of the remand process are completed. *Cf. Broward County*, 4 E.A.D. at 721; *McGowan*, 2 E.A.D. at 609.

***e**. General Approach in Performing Assessment*

***69** Petitioner also challenges the Region's general approach in performing its biological analysis. *E.g.*, Petiti on at 32-33; DEBP Suppl. Br. at 10 -11; Reply at 10. Petitioner asserts that there are only two biological assessments in the record that adequately focus on the "incremental effects" of BPS's discharge: the one it submitted as part of its permit applicatio n that was performed by its consultants LMS, and the assessment performed by Mark Gibson of RI DEM, a draft of which was distributed in May 2003 and which allegedly produced "nearly identical results" to LMS's.[162] DEBP Suppl. Br. at 11 & n. 14 (citing *Final Section 316(a) and (b) Demonstration* vols. IA-IB, apps. B -C, and A.R. 3248, Ex. 17 (Mark Gibson, *An Assessment of the Impact of Fishing an d Brayton Point Power Station on Local Stocks of Winter Flounder Using a Nested Biomass Dynamic Model* (draft May 2003))). In essence, Petitioner's argument is a debate over whose assessment is the better one, Petitioner's consultant's assessment or the Reg ion's, which again boils down to a scientific dispute between Petitioner and the Region about the best way to weigh and apply the scientific evidence to BPS and Mount Hope Bay. As we have stated several times already in this decision, we afford substantial deference to the Region's technical determinations and thus will generally only consider whether the Region duly considered the issues raised in the comments and whether its approach was rational in light of the information in the record. *See, e.g., supra* Parts IV, VI.A.2.b.ii.*c*.

We first observe that, with respect to the 2003 Gibson study, not only was the draft version of the study apparently availabl e almost a year after the Draft Permit was issued, but as Petitioner' s description of the study itself indicates, *see* DEBP Suppl. Br. at 11 n.14, it is only a *draft*.[163] Nonetheless, the Region asserts that it in fact did consider the May 2003 Gibson report, Response at 41 -45, and the Response to Comments document bears that out, *see e.g.* , RTC at IV -54,-66 to-68,-74. With respect to LMS's assessment, the record indicates that the Region thoroughly considered tha t assessment and found significant problems with it. *See, e.g.*, DPDD at 6-33 to-36. The Region also discussed Petitioner's approach and assessment in the Response to Comments document. RTC at III-9,-23 to-24. Thus, we find that the Region did "duly consider the issues" raised by Petitioner and other commenters on this issue. Finally, we find the approach adopted by the Region to be rational i n light of all the information in the record, and Petitioner has not submitted anything to persuade us otherwise.

f. Alleged "Uncorrected Errors"

Petitioner additionally alleges that the Region admitted to several errors it made in its biological determinations supportin g the Draft Permit but failed to correct those errors in its analyses supporting the Final Permit . Petition at 45. We address each of these alleged errors in turn.[164]

***70** First, Petitioner asserts that one of the Region's biologists had stated that "[i]f regional factors were responsible for the decline [in groundfish], then trawl abundance curves would look similar. "Petition at 45 (citing A.R. 199). Petitioner claims that although it had submitted info rmation before and during the comment period demonstrating that the fish abundance trends in Mount Hope Bay and Narragansett Bay are statistically similar, the Region failed to adjust its analysis to correct for this information. *Id.* at 45-46.

Petitioner's statement mischaracterizes the record and, more importantly, fails to demonstrate why the Region's responses to comments on this point were erroneous. In its Response to Comments document, the Region addressed this issue, explaining that "[i]f regional factors were solely responsible for changes in abundance, then abundance curves between Narragansett Bay and Mount Hope Bay would be *identical*. However, there is a statistically significant difference in abundance between the two waterbodies and thus the t rawl abundance curves are not identical. "RTC at VII -32. The Region also discussed the information that Petitioner had submitted on this issue. *See id.* at VII -33 to -36. In its discussion, the Region specifically disagreed with Petitioner's consultant's conc lusions that the abundance curves between the two bays are the same. *Id.*;*see also id.* at IV -48 to -50,-65,-70,-73, VII -30 to -33. Because Petitioner, on appeal, has not demonstrated that the Region' s responses to its comments are clearly erroneous, we find these arguments to be procedurally barred and, accordingly, will not consider them further. *See, e.g., In re Phelps Dodge Corp.* , 10 E.A.D. 460, 507-09 (EAB 2002) ; *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 668 (EAB 2001); *In re Envotech, L.P.*, 6 E.A.D. 260, 268 (EAB 1996).

Second, Petitioner claims that the Region acknowledged that information submitted by Petitioner regarding the effects of prolonged exposure to heat on juvenile flounder were "'reasonable' and correct." Petition at 46 (citing RTC at III -29). Petitioner further claims that these analyses demonstrate that the direct mortality due to BPS's current discharges of heat i s negligible and thus "mean[] that the direct mortality impacts of [BPS's] thermal discharg e on less sensitive species is also negligible."*Id.* Petitioner then claims that the Region's "acceptance of these results, and thereby the methods used to develop them (e.g., use of acclimation, * * * incremental effects of slight increases in temperature, * * *), is completely inconsistent with [the Region's] continued use of single critical temperature thresholds to set the heat limit in the Permit. "*Id.* Finally, Petitioner asserts that by accepting all of these scientific analyses, the Region acted arbitr arily and erroneously in not also accepting Petitioner's variance proposal. *Id.* Petitioner's argument - which essentially appears to be based on the assumption that the Region, in agreeing with one scientific point made by Petitioner, thereby accepted Peti tioner's entire biological analysis - is without merit.

***71** In its responses to comments, the Region agreed "that the chronic mortality results [submitted by Petitioner] do represent a reasonable estimate for juvenile winter flounder" because juvenile winter flounder have limited mobility. RTC at III -29. As we mentioned above, *see supra* Part VI.A.3. b.ii.*a*, the Region did not base its decision on direct mortality, but instead on several factors. *See* RTC at III -10 to -13,-28 to -29. Nor did the Region agree that chronic mortality results are negligible, as implied by Petitioner. Thus, the fact that the Region agreed on one point of Petitioner's analysis does not necessarily mean that the Region accepted Petitioner's entire analysis as correct or that the Region should have relied on all other points in Petitioner's analysis. The Region specifically disagreed with many scientific points in Petitioner's analysis, including thos e Petitioner now argues that the Region co nceded by virtue of the Region's agreement with Petitioner's statements about juvenile chronic mortality. *See, e.g., id.* at III-25,-27 to -28 (disagreeing with Petitioner's acclimation arguments). The Region also came to a different overall conclusion than Petitioner. We do not find that the Petitioner has demonstrated that the Region clearly erred in its conclusion regarding BPS's impacts on winter flounder, nor do we find that the Region, in agreeing to one statement regarding chronic effects on juvenile f lounder, in essence agreed with Petitioner's entire analysis on what the appropriate limits on the permit's thermal discharge should be.

***g.** Other Issues Raised Regarding the Biological Assessment*

As mentioned above, *see supra* Part VI.A.3.a., Petitioner also challenges several other factors in the Region's decision - the Region's use of a thermal areal plume, the Region's alleged failure to adequately consider other fish variables such as acclimation, the Region's determination that BPS's ther mal discharges are delaying the recovery of eelgrass, and the Region's reliance on winter flounder in the summer months. Petition at 32 -33, 44; DEBP Reply at 7; DEBP Suppl. Br. at 12. None of Petitioner's arguments on these points are persuasive.

With respect to the first three factors, the Region explained its position on these issues in the Determinations Document, *see, e.g.*, DPDD at 6 -25 to-26,-30 to-35, and also thoroughly discussed them in the Response to Comments document, *see, e.g.*, RTC at III -10,-12,-13,-19 to -21,-24 to -25,-27 to -28,-66 to -67.[165] Petitioner has not specifically addressed the alleged inadequacy of the Region' s responses or presented any new rebuttal arguments in its briefs regarding these scientific issues. Instead, it has merely repeated the comments it submitted on the Draft Permit. [166] We have examined the Region's original determinations, Petitioner's comments on these issues, and the Region's responses in its Response to Comments document and find that the Region's conclusions were adequately explained and supported in the record. We also find that they are rational in light of the scientific information in the record. Accordingly, in light of the deference we accord the Region on questions of technical judgment, we conclude that the Region did not clearly err in making the scientific conclusions that Petitioner challenges.

***72** As for Petitioner's last argument, the administrative record indicates that, although adult winter flounder may "leave" the Bay during summer months, juvenile winter flounder are present in the Bay and its tributaries year -round. *See* DPDD at 6-37 to-39,-56 to-57; *see also supra* Part VI.A.3.b.ii.*a*. Thus, Petitioner's argument appears to be contradicted by the record.

In sum, we find that the Region did not err based on these arguments.

iii. *Issues Surrounding the Applicability of State WQSs in Establishing a Variance*

In its Petition and supplemental briefs, Petitioner claims that the variance imposed by the Region was real ly an application of Massachusetts' mixing zone, which the Region cannot legitimately impose because a variance, by its very nature, is a variance from state WQSs. Petition at 27 -28; DEBP Suppl. Br. at 20 -22. CLF and KRC, on the other hand, argue that stat e WQSs cannot be trumped by a variance. CLF Br. at 3, 6-17; KRC Br. at 3, 7-8.

Upon reviewing Petitioner's comments to the Region on the variance issue (as cited to us by Petitioner), we do not find that it raised this issue in its comments on the Draft Permit. In fact, Petitioner essentially made the opposite argument, stating:

> [T]here is no indication that Region I formally established water -quality based limits in the draft permit *or that such limits formed the basis for the final limits Region I selected. * * * It does not appear from the documents that Region I has adopted the 'potential' mixing zone or state water quality standards as the 'applicable' limits.*"

BPS Comments on Draft Permit at 46 n.85 (emphasis added). The relevant limits in the Fina l Permit did not substantially change from those in the Draft Permit. *Compare* DPDD at 8-3 to-5 *with* Final Permit at 3 -6. Thus, this issue was reasonably ascertainable at the time Petitioner submitted its comments, Petitioner has provided no explanation for why it could not have raised this issue at the time it submitted its comments, and, most importantly, Petitioner has not explained why the Board should consider the issue on appeal when Petitioner made the reverse argument below. [167] As we have discussed previously in this decision, in order to preserve an issue for appeal, a petitioner must first demonstrate that all reasonably ascertainabl e issues and all reasonably available arguments supporting the petitioner's position were raised by the close of the comment period as required by the NPDES procedural regulations. *See supra* Part IV. Accordingly, we find this issue to be procedurally barred.

With respect to CLF's (and KRC' s) argument that a section 316(a) variance may not be less stringent than state WQSs and that the variance granted here was less stringent than the applicable state WQSs, we find this argument to be beyond the scope of the Petition and thus untimely raised . Although this is an issue that could have been reasonably ascertained and

raised in a timely permit appeal, neither CLF nor KRC filed its own petition in this matter, instead raising the issue in response briefs. Moreover, we specifically instructed participants to limit their arguments to those issues contained within the Petition. Order Granting Review at 9 n.14, 10 n.15. As we have stated in the past, "new issues raised at the reply stage of the[] proceedings are equivalent to late filed appeals and must be denied on the basis of timeliness." *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 126 n.9 (EAB 1999); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 219 n.62 (EAB 2000); *In re City of Ames*, 6 E.A.D. 374, 388 n.22 (EAB 1996) (denying petitioner's request to file a supplementary brief where the supplementary brief was filed after the appeal period under section 124.91(a) had passed and raised a related but "distinct" new issue). We are not convinced by CLF's arguments that the Petition, because of its great breadth, essentially opened the door to *any* issues pertaining to the Final Permit. CLF Br. at 2. CLF's more tailored argument - i.e., that its arguments are within the scope of the Petition because "the Petition directly attacks Region I's interpretation of [WQSs] and their relationship to variance decisions" - although a bit more tenable, still must fail. *Id.* CLF and KRC's arguments are, in fact, the exact reverse of those in the Petition: the Petition raised concerns that the Region *based* its variance on state WQSs leading to *permit conditions that were too stringent*, not that the Region *failed to base* its variance on state WQSs, leading to *conditions that were too lax*.[168] Accordingly, because CLF and KRC failed to file a timely petition and only raised this issue in their responses to the Petition, we find this argument to be procedurally barred at this time.

B. *Cooling Water Intake Structures and CWA Section 316(b)*

***73** As mentioned above, *see supra* Part III.A, the NPDES permit at issue here also regulates BPS's cooling water withdrawals. BPS withdraws water from the Taunton and Lee Rivers, uses it for cooling purposes within the facility, and then discharges the heated water into Mount Hope Bay. *See supra* Part III.A for a more detailed background discussion of the plant, its location, and its operation.

The Final Permit contains an intake capacity limitation of 56.2 million gallons per day. Final Permit at 5. The permit also allows for an additional intake of a maximum of 6,847 million gallons per year for occasional open-cycle cooling operations; such additional intake translates to 122 hours of once-through cooling per year based on the maximum flow rate. *Id.* This additional intake, however, is not allowed between February 1 and May 31, which is during the winter flounder spawning season. *See id.* at 6; Response at 11. According to the Region, these limits were imposed based on the Region's site-specific, Best Professional Judgment ("BPJ") determination under CWA section 316(b) of the "Best Technology Available" ("BTA") and, to a limited extent, the requirements of CWA section 401.[169] Response at 11, 83; *see also* DPDD at 7-1,-5,-27 to-28.

Petitioner and UWAG take issue with various aspects of the Region's CWIS-related determinations. In particular, Petitioner challenges: (1) the Region's application of the BTA standard to BPS, including the Region's alleged failure to rely on Agency "precedent" that open-cycle cooling is BTA, a standard that Dominion asserts was "codified" by a recent Agency rule finalized approximately nine months after the Region issued the permit; (2) the Region's consideration of both Massachusetts' and Rhode Island's WQSs in limiting cooling water withdrawals; (3) the underlying factual basis for the permit's cooling water limits; and (4) the Region's costs and economic benefits analyses. *See* Petition at 24-27, 33-39; DEBP Suppl. Br. at 22-40; DEBP Reply at 11-25. Although generally agreeing with many of these same points, UWAG focuses primarily on the Region's economic analysis under section 316(b) as well as the Region's reliance on state WQSs. The Region responds to each of these contentions. In general, the other amici support the Region's section 316(b) determinations.

As we explained in Part I, there are several overarching points that bear noting about this case. Most importantly, as we have already pointed out, CWA sections 316(a) and 316(b) have independent legal effect, and thus, Petitioner must successfully challenge the Region's approach under both section 316(a) and section 316(b) if it is to prevail in its challenge to the Final Permit's conditions that in effect require closed-cycle cooling.

Petitioner claims in its section 316(b) challenges that it is being treated unfairly when viewed through the lens of a rule that was promulgated after the permit in question here was issued (the so-called "Phase II Rule"). The rule established certain performance standards for facilities such as BPS. Notably, it did not require closed-cycle cooling as a matter of course for existing facilities. Petitioner argues that this means that the requirements set out in BPS's permit, which essentially require Petitioner to install a closed-cycle cooling system at all four of its units, are inconsistent with the Phase II Rule, and thus it is unfair to require Petitioner to do more than that which is mandated by the Phase II Rule. As discussed below, we conclude, as

Petitioner concedes, that the Phase II Rule, by its terms, do es not apply to this permit. Additionally, the fate of the Phase II Rule itself is unclear; it is currently being challenged by several states and environmental groups in the federal court of appeals. Moreover, it is unclear precisely what technology would have been required at BPS if the Phase II Rule applied. *See infra* note 194. Given the fact that the Region was not legally required to reissue the permit under the Phase II Rule, that an enormous delay would have attended revisiting the permit in this man ner, and that BPS's fate under the Phase II Rule is at best unclear, we conclude below that the Region's decision to proceed with the permit as framed was neither clear error nor inherently unfair to Petitioner.

***74** Another key section 316(b) issue concerns the applicability and interpretation of relevant state WQSs. Under the CWA, the Region is required to apply the more stringent of the section 316(b) technology standard or any applicable state WQSs. The Region concluded that both Massachusetts' and Rhode Island's WQSs essentially require closed -cycle cooling at BPS, a conclusion Petitioner challenges. We conclude that the Region did not clearly err in its determination that the facility is required to comply with the st ates' WQSs, which results in the same basic outcome (i.e., essentially requires closed -cycle cooling).

We now turn to the consideration of these issues in more detail.

1. *Issues Surrounding the Region's Application of the BTA Standard Under CWA Section 316(b)*

a. *Participants' Arguments*

Petitioner's first CWA section 316(b) challenge is to the Region's BTA determination for BPS. Petitioner claims that the Agency has routinely concluded that open -cycle cooling is BTA for power plants such as BPS. Pe tition at 24 -25; DEBP Suppl. Br. at 22 -23; *see also* UWAG Br. at 3. Petitioner further asserts that this "prior practice" has been codified by the Agency in its recent rule, NPDES - Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. 41,576 (July 9, 2004) [hereinafter Phase II Rule].[170] DEBP Suppl. Br. at 23. According to Petitioner, by imposing closed-cycle technology at BPS, the Region has ignored this practice, singling BPS out for disparate treatment, which it may not do. Petition at 25 (citing *Mass. Dep't of Educ. v. U.S. Dep't of Educ.* , 837 F.2d 536, 544 -45 (1st Cir. 1988), and *P.R. Sun Oil Co. v. EPA* , 8 F.3d 73 (1st Cir. 1993)); *see also* DEBP Suppl. Br. at 23 -25; UWAG Br. at 5. Significantly, Petitioner expressly maintains that it is *not* requesting retroactive application of the new Phase II Rule to BPS. DEBP Reply at 11; *see also* Oral Arg. Tr. at 106-07; DEBP Opposition to Mot. to Strike at 7 (section entitled "[DEBP] Is Not Asking the EAB to Apply the Phase II Rule to this Permit Proceeding "). Instead, Petitioner explains, it is arguing that the final rule demonstrates that the Region "based the Permit on an interpretation of Section 316 (b) and methods for calculating costs and benefits that EPA has explicitly rejected."DEBP Reply at 11. UWAG makes the same general points, stating that it "does not argue that the Region's decision must comply in all respects with the subsequently issued P hase II Rule," but that "if an analytical method is unreliable and the Region has notice of the significant deficiencies it contains, then the agency' s decision to ignore the deficiencies and use the method is illogical. "[171] UWAG Br. at 4 n.2. Finally, in its supplemental and reply briefs, Petitioner also argues that it is "well settled that, in the context of permitting proceedings, an agency must apply the law as it exists at the time of final agency action, " and that the Board has recognized that this principle applies where a regulatory change occurs after the permit is issued at the regional level but before the appeal is complete. [172] DEBP Suppl. Br. at 24 (citing *Ziffrin, Inc. v. United States* , 318 U.S. 73, 78 (1942) ; *In re Liquid Air P.R. Corp.* , 5 E.A.D. 247, 254 n.14 (1994)); *accord* DEBP Reply at 11.

***75** In response to these arguments, the Region asserts that the Permit was properly issued under CWA section 316(b) using the Region's BPJ to determine the appropriate BTA based on the facts specific to BPS. Response at 11, 83 -85; Reg. Suppl. Resp. at 21 -22; *see also* STB Br. at 7; CLF Suppl. Br. at 7. The Region, Rhode Island, CLF, and STB all point out that the Proposed Phase II Rule preamble expressly directed the permit issuers to continue using case -by-case, BPJ analyses for pending permits and *not* to use the proposed rule as guidance. Response at 85 (citing Proposed Phase II Rule, 67 Fed. Reg. at 17,124); RI Suppl. Br. at 6 -7 (same); CLF Suppl. Br. at 8 (same); STB Br. at 9 n.20 (same). Several of the participants also assert that the final rule preamble and/or regulatory text suggest the same thing. Reg. Suppl. Resp. at 48 (citing new 40 C.F.R. § 15.95(a)(2)(ii)); MA DEP Suppl. Br. at 11; RI Suppl. Br. at 6; STB Suppl. Br. at 2-3.

CLF argues, mo reover, that the Phase II Rule should not be applied because there is a presumption against the retroactive application of rules absent explicit statutory intent. CLF Suppl. Br. at 8. The Region additionally maintains that while case s have indicated that t he Agency has discretion to *consider* new regulations, this does not mean retroactive application is *compelled.* Reg. Suppl. Resp. at 46 -49 (citing cases including *In re Homestake Mining Co.* , 2 E.A.D. 195 (CJO 1986) , and *Alabama ex rel. Baxley v. EPA*, 557 F.2d 1101, 1108-1110 (5th Cir. 1977), *enforcing in part, vacating in part In re U.S. Pipe & Foundry Co.*, NPDES Appeal No. 75-4 (Adm'r 1975)).[173]

Several of the amici also argue that because the Phase II Rule is allegedly contrary to the CWA, congressional intent, and recent legal decisions, [174] a number of states and/or environmental groups are planning to challenge the rule and request its stay. *See* MA DEP Suppl. Br. at 12 -13; RI Suppl. Br. at 7; CLF Suppl. Br. at 9; STB Suppl. Br. at 2. According to them, relying on the new rule will lead to indefinite, and unfair, delays in implementing the permit and would be antithetical to t he CWA. *See* MA DEP Suppl. Br. at 13; RI Suppl. Br. at 7 -8; CLF Suppl. Br. at 9; STB Suppl. Br. at 3. MA additionally notes that even though the new rule does not require closed-cycle cooling as the performance standard that facilities must meet, the rule states that a closed-cycle system would always meet the performa nce standard. MA DEP Suppl. Br. at 11 n.5. STB also points out that, under the new rule, the Agency is allowing 3 -4 years for companies to gather data prior to actually imposing limits, a practice that would unconscionably extend Petitioner's current permit. STB Suppl. Br. at 3.

Finally, the Region and Rhode Island challenge the majority of Petitioner's and UWAG's arguments related to EPA's new Phase II Rule on procedural grounds. The Region alleges that all but one of these arguments consist of new issue s raised for the first time in the second round of briefing in the appeal. Reg. Second Mot. to Strike at 1; *see also* RI Mot. to Strike. The Region moves to strike both the new arguments raised and the four "extra-record" documents submitted by Petitioner a nd/or UWAG from the Phase II Rulemaking record.[175] Reg. Second Mot. to Strike at 1; *see also* RI Mot. to Strike at 1. In particular, the Regi on moves to strike: (1) a March 17, 2004 memorandum from EPA Headquarter to Petitioner's counsel, which the Region claims it never saw before it was sent and is dated five months after the Final Permit was issued, DEBP Suppl. Br., Ex. J; (2) excerpts from the Agency's responses to comments for the Phase II Rule, UWAG Br. attach. 1, 5; (3) a June 2, 2003 document that apparently UWAG submitted as part of its comments to EPA Headquarters on a Notice of Data Availability that was issued as part of the Phase II Rulemaking process and that the Region claims to never have seen, *id.* attach 3; and (4) a series of pages from the unofficial prepublication draft of the preamble to the Final Phase II Rule.

b. *Analysis*

***76** We begin the analysis of this issue by considering the statutory provision at issue here - CWA section 316(b) - and the history of its application to NPDES permits. We then summarize the approach taken by the Region in developing the Permit's CWIS-related limitatio ns under section 316(b). Next we consider Petitioner's contention that open -cycle cooling was and is BTA for existing power plants and that the Region subjected Petitioner to disparate treatment by essentially requiring closed-cycle cooling at BPS. Finally, we consider the relevance of the Phase II Rule to the Region's section 316(b) considerations for BPS.

i. *History of the Section 316(b) Provision*

Section 316(b) is a relatively brief statutory provision, stating only that "any standard established pursuant to section [301 [176] or section [306[177] and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environment al impact."33 U.S.C. § 1326(b). As mentioned above, *see supra* Part II.A, the statute does not specify any particular technology to be used by the point source or what methods the Agency should use to make section 316(b) determinations. *See id.*

In the mid -1970s, the Agency developed comprehensive regulations to provide national technology standards for CWISs pursuant to section 316(b).*See Appalachian Power Co. v. EPA*, 566 F.2d 451, 454 (4th Cir. 1977); *see also Virginia Elec. and Power Co. v. Costle*, 566 F.2d 446, 447 (4th Cir. 1977); *Cronin v. Browner*, 898 F. Supp. 1052, 1056 (S.D.N.Y. 1995). These regulations, however, were challenged by a number of utility companies and were remanded back to the Agency by the Fourth Circuit based on procedural grounds. *Appalachian Power*, 566 F.2d at 457. EPA later withdrew the regulations almost in their entirety, retaining only 40 C.F.R. § 401.14 , a provision that merely reiterates the section 316(b) statutory language.

*See*44 Fed. Reg. 32,956 (June 7, 1979) (deleting part 402, the section containing all of the substantive CWIS regulations, in its entirety). Several decades later, in 2001, the Agency issued CWIS regulations, but only for certain *new* facilities. *See*NPDES: Regulations Addressing Cooling Water Intake Structures for New Facilities, 66 Fed. Reg. 65,256 (Dec. 18, 2001) [hereinafter Phase I Rule]. More recently, in its Phase II Rule, the Age ncy issued final CWIS regulations for certain existing facilities, specifically those that like BPS withdraw a minimum of 50 million gallons per day ("MGD") and use at least 25 percent of the withdrawals for cooling purposes. *See*Phase II Rule, 69 Fed. Reg. 41,576. As noted previously, *see supra* note 170, at the time the Region issued the Draft and Final Permits for BPS, the Agency had not yet issued the final Phase II Rule specifying CWIS requirements for existing facilities such as BPS.

***77** Over the years, in the absence of detailed, applicable regulations for CWISs, the Agency has made section 316(b) determinations on a case-by-case, BPJ basis. *See, e.g., Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 181-82 (2d Cir. 2004) (noting that the Agency has applied section 316(b) on a "case-by-case, 'best professional judgment' basis that has governed" in the absence of a rul e); *Hudson Riverkeeper Fund, Inc. v. Orange and Rockland Utils.* , 835 F. Supp. 160, 165 (S.D.N.Y. 1993) (explaining that the lack of section 316(b) technological standards "leaves to the Permit Writer an opportunity to impose conditions on a case by case basis, consistent with the statute, and a view that best available doesn't mean perfect "); *see also*Phase I Rule, 66 Fed. Reg. at 65,262 ("Since the Fourth Circuit remanded EPA's section 316(b) regulations in 1977, NPDES permit authorities have made decisions implementing section 316(b) on a case -by-case, site-specific basis."); *cf. NRDC v. US. EPA* , 822 F.2d 104, 111 (D.C. Cir. 1987) (stating, in the context of effluent limitations, that "[i]f no national standards have been promulgated for a particular category of point sources, the permit writer is authorized to use, on a case-by-case basis, 'best professional judgment' to impose 'such conditions as the permit writer determines are necessary to carry out the provisions of [the CWA] '" (citing CWA § 402(a)(1), 33 U.S.C. § 1342(a)(1)). Consequently, because no applicable rule existed at the time the Region issued BPS's draft and final permits, the Region utilized BPJ to issue the permits.

ii. *Region's Application of the BTA Standard/The Development of Brayton Point's Cooling Water Intake Structure Limitations*

According to its Determinations Document, the Region developed the CWIS -related determinations for BPS based on a fact-specific analysis using BPJ. *See, e.g.*, DPDD at 7-1,-5,-28. In so doing, the Region considered several Agency guidance documents that d iscuss BTA and/or CWIS technologies. *Id.* at 7 -5 to -6. The Region devoted an entire chapter of the Determinations Document to its analysis of the appropriate CWIS requirements that should be imposed on BPS under CWA section 316(b). *See id.* at 7 -1 to 7 -181. T he analysis included a consideration of the "potentially available, practicable technological alternatives " for ensuring that BPS's CWISs "reflect the BTA for minimizing adverse environmental impacts."*Id.* at 7 -28;*see also id.* at 7 -29 to 7 -76 (discussion of various options). The Region considered such options as closed-cycle cooling (with both wet and dry cooling towers) for one or more units at BPS, non -closed-cycle cooling flow reduction options, as well as other flow, design, and/or location options. *Id.* at 7-28 to 7-75. In connection with this part of its analysis, the Region also considered the costs of the various technological options. *Id.* at 7-77 to 7-102.

***78** In addition, the Region e xamined the biological impacts of BPS's cooling water intake, which included a calculation of impingement[178] and entrainment losses [179] under five different operating scenarios (e.g., current operations, Petitioner's proposed operations, closed-cycle options), and the ecological significance of these losses. *Id.* at 7-102 to-126.

In order to assess the ecological significance of the estimated impingement and entrainment losses caused by BPS operations under the different scenarios, the Region "compared Age 3 adult [fish] equivalen t losses to estimates of existing fish populations in Mount Hope Bay " and also looked at "production foregone modeling."[180]*Id.* at 7-116.The Region concluded that, in considering the percentage of the (Age 3 equivalent) winter flounder population lost under each operating scenario, current operations lead to population losses of 80%, [181] Petitioner's proposed permit limitations would lead to losses of 70%, closed-cycle cooling in only Unit 3 would lead to losses of 65%, and closed -cycle cooling in all units would lead to losses of 26%. *Id.* at 7-119, tbl. 7.5-8. The Region also looked at losses for several other species besides winter flounder and provided a summary of the estimated impingement and entrainment losses of those finfish. *Id.* at 7-123, tbl. 7.5-9. The Region noted that catch rates for two of the species are as low as, if not lower than, those for winter flounder; thus the Region thought it likely that "their population numbers in Mount Hope Bay are at as equally low levels as winter flounder. "*Id.* at 7-123.The

Region, however, did not provide a percent mortality for those species, apparently because there was not as extensive an analysis of the population for those other species. *See id.* at 7-122 to-123. The Region also found that the annual total production foregone for BPS under different operating scenarios was wide-ranging: from about 122 million pounds under the 1993 permit, to about 83 million pounds under the current operating conditions, to about 55 million pounds for Petitioner's proposed approach and the option of closed-cycle cooling in Unit 3 only, to 3 million pounds with whole plant closed-cycle cooling. *Id.* at 7-125, tbl. 7.5-11.

The Region concluded that BPS "withdraws close to 1 billion gallons of cooling water a day from Mount Hope Bay. This results in the entire volume of Mount Hope Bay being cycled through the plant about 7 times a year. Associated with this water withdrawal is the entrainment and impingement of trillions of organisms, the vast majority of which are killed." *Id.* at 7-125.The Region also found that BPS had "taken large percentages of the [bay's] population of a variety of commercially and recreationally important fish species." *Id.* The Region concluded that the entrainment and impingement losses from BPS "have significantly contributed to the collapse of the overall indigenous community of fish" in the bay and that this constitutes "severe adverse environmental impacts." *Id.* The Region also concluded that many of the other scenarios it considered, including the one proposed by Petitioner, would also lead to significant losses of organisms (for examples, Petitioner's proposed scenario would lead to the loss of 70% of the winter flounder population) and would likewise cause severe adverse impacts. *Id.* at 7-125 to-126. The Region thus concluded that "[i]n order to give the Mount Hope Bay ecosystem a chance to recover, the total number of organisms taken via entrainment and impingement by [BPS] must be dramatically reduced." *Id.* at 7-126.This, according to the Region, could be accomplished with the Closed-Cycle Entire Station option, which imposes flow reductions of 96% from the current conditions. *Id.*

***79** The Region then used its biological analysis to assess the "the benefits to society from the reduced adverse environmental effects that would accompany cooling system improvements at BPS." *Id.* at 7-127.This calculation was used in conjunction with the Region's cost estimates to determine "whether or not the cost of the BTA requirements would be 'wholly disproportionate to the environmental benefit to be gained.'"[182] *Id.* at 7-76;*see also id.* at 7-126 to 7-127.

iii. *Agency's Historic Section 316(b) Practices and Disparate Treatment Issue*

Petitioner argues that the Region's BTA determination for BPS is clearly erroneous because BTA for existing large facilities such as BPS "was, is, and should be open-cycle cooling," as was confirmed and codified by the Agency's recent Phase II Rule. DEBP Suppl. Br. at 23; *accord* DEBP Reply Br. at 11. Several of the amici interpret Petitioner's arguments as essentially requesting retroactive application of the Phase II Rule. *See* summary of amici's arguments *supra* Part VI.B.1.a. In its reply brief and at oral argument, however, Petitioner maintains that it is *not* requesting retroactive application of the rule. DEBP Reply at 11; Oral Arg. Tr. at 106-07; *see also* UWAG Br. at 4 n.2 (stating that it is not arguing that the Phase II Rule should be applied retroactively). Accordingly, in our analysis of the relevance of the Phase II Rule, we will not address the question of whether the Phase II Rule should be applied retroactively in this case.

We start with the question of whether, as Petitioner alleges, the Agency treated it in an impermissibly "disparate manner" by failing to follow its allegedly long-standing practice of finding BTA for existing plants such as BPS to be open-cycle cooling. This involves a two-part inquiry: first, whether the Agency, in fact, had a long-standing practice of finding open-cycle cooling to be BTA, which includes the question of whether the Phase II Rule "codified" such a practice; and second, if so, whether the Region treated BPS in an impermissibly unique and disparate manner by imposing limits that would likely lead to closed-cycle cooling.[183] It is worth noting at the outset of this discussion that the Region does not *per se* impose closed-cycle cooling in an NPDES permit; rather, the Region establishes limits on cooling water withdrawal volumes through the CWISs (i.e., flow or capacity) that may, in essence, effectively require such technology be installed at a facility in order for that facility to meet the limits imposed by the permit. *See* DPDD at 7-25 to-26,-33. Permittees may also meet such reduced flow limitations by cutting back on their operations. *See id.* at 7-25.[184]

In considering these issues, we keep in mind, as we have already stated several times in this decision, *see, e.g., supra* Part IV, that in order to preserve an issue for appeal, a petitioner must demonstrate that it raised all reasonably ascertainable issues and arguments during the public comment period. 40 C.F.R. § 124.13, .19(a); *see also, e.g., In re Westborough*, 10 E.A.D. 297, 304 (EAB 2002). Moreover, a petitioner must also demonstrate that the permit issuer's decision was clearly erroneous.

40 C.F.R. § 124.19(a); *see e.g., In re City of Marlborough*, NPDES Appeal No. 04-13, slip op. at 8 (EAB, Aug. 11, 2005), 12 E.A.D. ___; *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 744 (EAB 2001).

***80** In its comments on the Draft Permit, Petitioner voiced concerns similar to those raised on appeal, arguing that the Agency had "historic[ally] reject [ed] closed cycle cooling as BTA for existing power plants and allow[ed] existing plants choices among technologies and mitigation measures. "[185] BPS Comments on Draft Permit vol. I, at 73; *accord id.* at 73-74 (commenting that the Agency had been "uniform" in rejecting closed-cycle cooling as BTA for existing plants). The Region clearly responded to these comments.[186] RTC at IV-4 to-11 (responses 2-5, 7-8); *see also id.* at IV-91,-114 to-115 (responding to similar comments from other commenters). The Region stated, for example, that it "does not agree that the resu lts of its application of the BTA standard over the past 30 years have been 'uniform' in rejecting closed-cycle cooling. In fact, EPA has never rejected closed -cycle cooling as potentially representing BTA for some facilities. "*Id.* at IV-5. The Region furth er stated that the Agency, in fact, had "established NPDES permit limits that would have required facilities to retrofit to closed-cycle cooling."*Id.* at IV-6. The Region went on to describe several cases in which the Agency considered imposing (and, in some cases, did impose) limits that would have required closed -cycle cooling.[187]*See id.; see also id.* IV-9, VIII-15 to VIII-16 (providing examples of plants that had undergone retrofitting); DPDD at 7-38. In conclusion, the Region stated "EPA believes it is clear from these past permitting decisions that EPA has *not* rejected closed-cycle cooling as an 'available' technology and potentially the BTA for some facilities under CWA [section] 316(b), any more than EPA has mandated closed-cycle cooling for all facilities. "RTC at IV-6. Instead, the Region argues, the Agency has "left the determination to a case-by-case analysis."*Id.* Consequently, the Region concluded that its permit determination for BPS was "not a departure from past precedent."*Id.* at IV-8.

The Region also argued that the very nature of case-by-case analyses does not lend itself to bright-line rules. *See, e.g.*, RTC at IV-5. Thus, while agreeing with Petitioner that "the agency should consider past permitting decisions in making BTA determinations," the Region explained that "under a case-by-case analysis, while the same standards are applied, the details of the ana lysis and the final resolutions could differ for different cases based on the different facts of each case. This is the essence of case -by-case, BPJ analysis. "*Id.; see also* DPDD at 7 -34 (stating that "in making the case -by-case BPJ determinations for this permit, EPA must determine whether these technologies are available and practicable *specifically for retrofitting at BPS*"); RTC at IV-9 to-10.

***81** Upon review of the record and for the following reasons, we do not find t he Region's BTA determination to be clearly erroneous. Petitioner has not demonstrated that closed -cycle cooling has consistently been rejected as BTA under CWA section 316(b), that open-cycle (or once-through cooling) has been conclusively found to be BTA , or that Petitioner has been treated in an impermissibly disparate manner.

First, we agree with the general point made by the Region: that the very nature of the case -by-case BPJ determinations essentially prevented the creation of an absolute standard for BTA.[188]*See* RTC at IV -5. The Region's conclusions in this regard are supported by several statements in the Agency's section 316(b) guida nce documents and in the preamble language of the Phase II Rule itself regarding the historical Agency practice under section 316(b). For example, the Agency's general section 316(b) guidance states that "[t]he environmental -intake interactions in question are highly site -specific and the decision as to best technology available for intake design, location, construction, and capacity must be made on a case-by-case basis."Office of Water Enforcement, U.S. EPA, [Draft] Guidance for Evaluating the Adverse Impa ct of Cooling Water Intake Structures on the Aquatic Environment: Section 316(b), P.L. 92 -500, at 4 (May 1, 1977). Additionally, in describing the Agency's prior practices regarding the implementation of section 316(b), the preamble to the final Phase II Rule noted that:

> Since the Fourth Circuit remanded EPA's section 316(b) regulations in 1977, NPDES permit authorities have made decisions implementing section 316(b) on a case -by-case, site -specific basis. * * * [T]he [1977 draft] guidance left the decision s on the appropriate location, design, capacity, and construction of cooling water intake structures to the permitting authority. Under this framework, the [Region] determined whether appropriate studies have been performed, whether a given facility has mi nimized adverse environmental impact, and what, if any, technologies may be required.

69 Fed. Reg. 41,584 (emphasis added); *accord* Proposed Phase II Rule, 67 Fed. Reg. at 17,124 (stating that, in proposing "a national framework that would establish certain minimum requirements for the location, design, capacity, and construction of cooling water intake structures" for Phase II existing facilities, "the Agency is proposing to revise the approach adopted in the 1977 draft guidance which was based on the judgment that '[t]he decision as to best technology available for intake design location, construction, and capacity must be made on a case-by-case basis'"). These statements support the Region's conclusions that the Agency's section 316(b) BPJ approach during the past several decades had been case-by-case, essentially meaning that there was no absolute, national BTA standard for large, existing power plants.

***82** Second, evidence in the record supports a finding that closed-cycle cooling has not consistently been rejected, as argued by Petitioner. The Administrator's discussion of closed-cycle cooling in *Seabrook I* is instructive on this point. 1 E.A.D. 332, 342 (Adm'r 1977). There he stated that "[i]t is Agency policy that the Agency may not require use of cooling towers under Section 316(b); however, it may restrict the capacity of the intake structures and *thus indirectly necessitate a closed-cycle cooling system*."[189] *Id.* at 342 (emphasis added) (relying on Decision of The General Counsel on Matters of Law No. 41, Issue No. III, June 1, 1976). In discussing the relationship between sections 316(a) and 316(b), he also observed that in some cases, even if an applicant were able to demonstrate that less than closed-cycle cooling was necessary under section 316(a), "an applicant could face restrictions on intake capacity *which could only be met by use of closed-cycle cooling*" under section 316(b). *Id.* at 341 (emphasis added). Furthermore, although closed-cycle cooling was only infrequently found to be BTA at existing facilities, and even less infrequently implemented, *see supra* note 187 and accompanying text, it does not appear that the Agency ever conclusively rejected it as potentially BTA for all facilities as Petitioner argues. The very fact that the Agency periodically considered closed-cycle cooling, and indeed determined closed-cycle cooling to be BTA in some cases, refutes such an argument irrespective of whether subsequent events superseded the Region's determinations.[190]

Third, contrary to Petitioner's arguments on appeal, there is no evidence that the Agency ever stated in any of its case-by-case, BPJ determinations that open-cycle cooling was the absolute, national BTA standard for all existing facilities, and Petitioner has not pointed us to any decision that makes such a statement. Significantly, contrary to Petitioner's assertions that the final rule "codified" the Agency's determination that open-cycle cooling is BTA for existing plants, the preambles to both the proposed and final rules themselves state that there never were uniform BTA standards.[191] In describing the draft guidance that the Agency had been using for the past several decades in making section 316(b) BTA determinations, both preambles state that "[a]lthough the draft guidance described the information that should be developed, key factors that should be considered, and a process for supporting section 316(b) determinations, *it did not establish uniform technology-based national standards for best technology available* for minimizing adverse environmental impact." 69 Fed. Reg. 41,584 (emphasis added); Proposed Phase II Rule, 67 Fed. Reg. at 17,126.

***83** Furthermore, as we similarly concluded with respect to its BAT analysis, *see supra* note 88, even if the Region's BTA determination for BPS were found to be "disparate," the Region has provided a detailed justification for its final case-by-case, BPJ BTA determination. Such justification includes factors we have mentioned already in this decision, including the substantial amount of the Bay's water BPS uses, the enormous amount of organisms injured or killed by BPS's cooling water withdrawals, and the geography of the Bay itself. Even if a court were to find BPS's treatment under section 316(b) to be a change from previous permit decisions, we believe the Region's explanation for its BTA decision in this case would meet the standard required by courts - as articulated in those cases cited by Petitioner - where an Agency has changed its course. *E.g., P.R. Sun Oil v. U.S. EPA*, 8 F.3d 73, 78-79 (1st Cir. 1993) (pointing out that a "'departure from prior norms' must be explained" (quoting *Atchison, Topeka & Santa Fe R.R. v. Wichita Bd. of Trade*, 412 U.S. 800, 808 (1973))); *Mass. Dep't of Educ. v. U.S. Dep't of Educ.*, 837 F.2d 536, 544-45 (1st Cir. 1988) ("[A]gencies 'have an obligation to render consistent opinions and to either follow, distinguish or overrule' their own earlier pronouncements."(quoting *Chisholm v. Def. Logistics Agency*, 656 F.2d 42, 47 (3d Cir. 1981))); *see also P.R. Aqueduct & Sewer Auth. v. U.S. EPA*, 35 F.3d 600, 607 (1st Cir. 1994).

In sum, for the foregoing reasons, we do not find the Region's BPJ BTA determination for BPS to be clearly erroneous. We do not find persuasive Petitioner's arguments that the Agency has rejected closed-cycle cooling as BTA, that the Agency's long-standing practice has been that BTA for existing plants is open-cycle cooling, and that Petitioner has been subject to "disparate treatment." The Region's analysis and approach on these interrelated issues appear rational to us in light of all the information in the record. Moreover, Petitioner has failed to provide *any* specific information in its Petition or subsequent

briefs rebutting the basis for the Region's decision. Petitioner has merely expressed disagreement with the Region's rationale, which is not sufficient to meet its burden. [192]*See* DEBP Suppl. Br. at 23 n.48 (citing to RTC at IV-5 to-6). Thus, Petitioner has failed to demonstrate clear error on the part of the Region. Consequently, we find no reason to disturb the Region's conclusions. *See. e.g., In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999).

iv. *Relevance of Interpretations in EPA's Phase II Rule to the Region's Section 316(b) Analysis*

***84** We next consider whether any interpretations in the final Phase II Rule are relevant or should be applied to the Final Permit. Petitioner claims that, even though the Phase II Rule has no retroactive effect, it reflects an interpretation of the statute that must be applied to the permit because the permit is not yet "final" while it is still on appeal at the Agency. DEBP Suppl. Br. at 24; DEBP Reply at 11-12. Petitioner asserts that the statutory interpretation of BTA in the Phase II Rule would require open-cycle and not closed-cycle cooling at facilities such as BPS. [193]*See* DEBP Reply at 11. Because we concluded in the previous section that the Agency had never defined or interpreted a specific cooling system (either open-cycle or closed-cycle cooling) to be BTA under section 316(b) prior to the issuance of the new rule, *see supra* Part VI.B.1.b.iii, Petitioner is seeking to have an interpretation of BTA that was made after the Final Permit was issued by the Region be applied to it. [194] In support of its position, Petitioner relies heavily on the Supreme Court case, *Ziffrin, Inc. v. United States*, 318 U.S. 73 (1943), as well as Justice Scalia's discussion of *Ziffrin* in his concurring opinion in *Kaiser Aluminum & Chem. Corp. v. Bonjorno*, 494 U.S. 827, 840-58 (1990). Petitioner also cites to the Board's decision *In re Liquid Air Puerto Rico Corp.*, 5 E.A.D. 247 (EAB 1994).

As a matter of procedure, this particular argument was first raised in Petitioner's supplemental brief, and not in the Petition. *Compare* Petition at 24-25 *with* DEBP Suppl. Br. at 24-25; *see also* DEBP Reply at 11-12 (also discussing this issue). In raising this new issue, Petitioner does not acknowledge that it has raised a new argument, nor does it provide any justification for raising such argument late. *See* DEBP Suppl. Br. at 24-25; DEBP Reply at 11-12. In our Order Granting Review, we specifically instructed participants to limit their arguments to those issues contained within the Petition. Order Granting Review at 9 n.14, 10 n.15. As we stated earlier in this decision, *see supra* Part VI.A.3.b.iii, the Board has explained that "new issues raised at the reply stage of the[] proceedings are equivalent to late filed appeals and must be denied on the basis of timeliness." *In re Knauf Fiber Glass*, GMBH, 8 E.A.D. 121, 126 n.9 (EAB 1999); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 219 n.62 (EAB 2000); *In re City of Ames*, 6 E.A.D. 374, 388 n.22 (EAB 1996). Since the Petition did discuss the anticipated final rule and the Final Permit's alleged inconsistency with the rule, Petition at 6, it could be determined that this issue should have been raised in the Petition and thus should be dismissed as untimely, especially in light of Petitioner's failure to justify its late appearance in these proceedings. However, given the significance of the issue and recognizing that the Phase II Rule on which it was premised was issued only after the filing of the Petition, we choose not to reject it on procedural grounds but rather will consider it. We therefore DENY the Region's and Rhode Island's motions to strike, insofar as they request that all new arguments related to the Phase II Rule be stricken. [195] In our analysis below, we conclude that even assuming that the Phase II Rule represents a determination that open-cycle cooling is BTA, that determination would not apply to the permit at hand.

***85** As a preliminary matter, we note that it is difficult to remove the issue of "retroactivity" from our discussion below because the cases Petitioner cites indirectly raise or are somehow related to this issue. Because these cases are related to the issue of retroactivity, we question whether they are truly applicable to Petitioner's argument and the facts and circumstances of this case. In any case, although our discussion may touch on the issue of retroactivity, we keep in mind Petitioner's assertions that it is not raising issues of retroactivity or requesting the retroactive application of the rule.

The primary case relied upon by Petitioner for its argument, *Ziffrin v. United States*, involved a challenge to an order of the Interstate Commerce Commission ("ICC") denying appellant's permit application. 318 U.S. at 74. In between the time the company filed its permit application and the agency issued an order denying the permit, Congress amended a provision of the statute governing such permits. *Id.* Appellant contended that the amended provision should apply to its application. *Id.* at 76. Relying principally upon a case where an intervening judicial decision had been given retroactive effect, the Supreme Court held that "a change in law pending an administrative hearing must be followed." *Id.* at 78 (relying upon *Vandenbark v.*

Owens-Illinois Glass Co., 311 U.S. 538 (1941); *see also Kaiser Aluminum & Chem. Corp. v. Bonjorno*, 494 U.S. 827, 847-48 (1990) (Scalia, J., concurring) (explaining that in *Ziffrin*, the Court had required the ICC "to apply current law (rather than the law in effect at the time of filing of the permit application) in determining whether the applicant was qualified to obtain a permit for future operations").

Initially we note that the statements in *Ziffrin* should be considered in light of the Supreme Court's later decision in *Landgraf v. USI Film Products*, 511 U.S. 244 (1994). In *Landgraf*, the Court clarified some apparently inconsistent statements it had made in two distinct lines of cases. 511 U.S. at 263-64. The first set of decisions had contained statements along the lines that "a court is to apply the law in effect at the time it renders its decision." *Id.* at 264.The *Landgraf* Court cited *Bradley v. School Board of Richmond*, 416 U.S. 696 (1974), as the primary case standing for this general rule. *Ziffrin* is also one of the decisions that falls within this line of cases; the *Bradley* decision mentions this fact. *See Bradley*, 416 U.S. at 713 n.17. *But see Kaiser Aluminum & Chem. Corp. v. Bonjorno*, 494 U.S. 827, 847 (Scalia, J., concurring) (noting that *Ziffrin* "did not involve retroactive effect at all").[196] The second line of cases had stated the axiom that "[r]etroactivity is not favored in the law," and that "congressional enactments and administrative rules will not be construed to have retroactive effect unless their language requires this result." 511 U.S. at 264 (citing *Bowen v. Georgetown Univ. Hosp.*, 488 U. S. 204, 208 (1988)). In attempting to combine and clarify the principles presented by these two lines of cases, the *Landgraf* Court concluded that the first step is to "determine whether Congress has expressly prescribed the statute's proper reach. If Congress has done so, of course there is no need to resort to judicial default rules." *Id.* at 280.If the statute (or rule) does not explicitly address this question and the law (or rule) would have a retroactive effect, there is a presumption against applying it retroactively.[197] *Id.* at 273.In light of the Court's clarification of these two interrelated sets of legal principles and in light of the fact that *Ziffrin* did not contain such a two-step analysis, it is not clear whether the reasoning in *Ziffrin*, which was based upon one set of these principles, still applies with equal force today.

***86** Furthermore, to the extent that *Ziffrin* would provide guidance in the absence of a specific statement as to whether a rule was intended to apply retroactively, the final Phase II Rule clearly indicates that the rule is to be applied prospectively. *See, e.g.*, Phase II Rule, 69 Fed. Reg. at 41,593 (stating that "[p]ermit applications submitted *after* the effective date of the rule must fulfill rule requirements") (emphasis added); *see also* Proposed Phase II Rule, 67 Fed. Reg. at 17,124 ("Because the Agency is inviting comment on a broad range of alternatives for potential promulgation, today's proposal is not intended as guidance for determining the best technology available to minimize the adverse environmental impact of cooling water intake structures at potentially regulated Phase II existing facilities. Until the Agency promulgates final regulations based on today's proposal, Directors should continue to make section 316(b) determinations with respect to existing facilities, which may be more or less stringent than today's proposal, on a case-by-case basis applying best professional judgment.").

In any event, as Justice Scalia noted in a later concurring opinion, *Ziffrin* "involved a change that had occurred after application for a license had been made but before it had been ruled upon." *Kaiser*, 494 U.S. 847. Unlike the present case, *Ziffrin* did not involve a change to the laws or regulations (or an application of those laws) while an *appeal* of the initial decision was pending at the agency, but rather a change in the law prior to the issuance of the initial decision.[198] Moreover, here the intervening determination of a statutory standard (i.e, BTA) that Petitioner asks to be applied is a determination that was made in a regulation that clearly was not intended to apply to pending permits but only to new applications. For several reasons, including those articulated in the Agency cases discussed below, we believe these to be important distinctions.

On several occasions, the Board and its predecessors have addressed the extent to which new rules and/or new standards should be considered in ongoing permitting proceedings. In 1975, in a case very similar to the present one, the Administrator stated that "to allow permit limitations and conditions to change according to a 'floating' standard or guideline during the pendency of a permit review proceeding would be highly disruptive and counterproductive."[199] *In re U.S. Pipe & Foundry Co.*, NPDES Appeal No. 75-4 (Adm'r 1975), *aff'd in part, rev'd in part sub nom. Alabama ex rel. Baxley v. EPA*, 557 F.2d 1101, 1108 (5th Cir. 1977). He further observed that:

> ***87** The Administrator's review (of the Regional Administrator's action) must be based on the record of the proceedings. Although matters contested in an adjudicatory hearing do not become final for purposes of judicial review until the Administrator has acted on an appeal, the Administrator's review of the original action taken by the Regional Administrator should be based on the standards and guidelines in

> existence at the time the original action was taken, and thus, to that extent, finality must be accorded the original action taken. To conclude otherwise would mean that the Administrator would become the sole and final arbitrator of every permit limitation w here a party (EPA included) might want to gamble on the likelihood of an intervening change in the applicable standards or guidelines. Such a result would be inimical in the extreme to the nation's water pollution control program.

Id. He therefore concluded that "[t]he standards and guidelines for the preparation of NPDES permits must be fixed at some point in time so permit terms can become final and pollution abatement can proceed. I believe the proper point in time for fixing applicable NPDES standards and guidelines is when the Regional Administrator initially issues a final permit. "*Id.* On appeal, the Fifth Circuit quoted much of the Administrator's statements on this point and affirmed the Agency's conclusions that the appropriate limitations to be ap plied to the permit were those in effect at the time of initial permit issuance. *Baxley*, 557 F.2d at 1110.

In an analogous situation involving several rule changes, the Agency's Chief Judicial Office r found that a permit applicant was not entitled to the benefit of regulatory changes that were merely proposed at the time the region issued the permit. *In re Homestake Mining Co.*, 2 E.A.D. 195 (CJO 1986); *see also In re Rubicon Inc.*, 2 E.A.D. 551, 555 & n.10 (CJO 1988) (stating that guidelines promulgated after permit issuance by the Region do not automatically apply during appeal). Moreover, although the regulations in question had apparently become final at the time the case was decided on appeal, *see Homestake Mining*, 2 E.A.D. at 200 n.9, the Chief Judicial Officer did not remand the decision for further consideration under the new regulations, *id.* at 198-202.

The Board has also considered similar issues on several occasions, primarily involving new regulations. *E.g., In re Liquid Air P.R. Corp.*, 5 E.A.D. 247 (EAB 1994); *In re J&L Specialty Prods. Corp.*, 5 E.A.D. 31 (EAB 1994); *In re GSX Servs. of S.C., Inc.*, 4 E.A.D. 451, 465 (EAB 1992) ; *see also In re Phelps Dodge Corp.* , 10 E.A.D. 460, 478 n.10 (EAB 2002) . In *Phelps Dodge*, we noted that "the Regio n's obligation, as the permit issuer, is to apply the CWA statute and implementing regulations in effect at the time the final permit decision is made. "10 E.A.D. at 478 n.10. Moreover, as we explained in *J&L Specialty Products* ,"[o]n administrative review, the Agency has the *discretion* to remand permit conditions for reconsideration in light of legal requirements that change before the permit becomes final agency action. "5 E.A.D. at 66 (emphasis added). The case Petitioner has cited, *In re Liquid Air Puerto Rico Corp.* , likewise makes this point, stating that "regulations adopted before a permit decision becomes final upon completion of administrative review *should be considered* when examining the issues raised on appeal. "[200]5 E.A.D. at 254 n. 14 (emphasis added). Insofar as these principles apply to the situation where a new statutory interpretation is made after a permit has been issued by the Region or other permit iss uer, we agree with the Region that this statement is not intended to suggest that a remand to the Region is compelled. The language quoted above from *J&L Specialty Products*, a case which was decided a few months prior to *Liquid Air* and which *Liquid Air* relies upon in support of its statement, *see*5 E.A.D. at 254 n.14, makes clear that such consideration is discretionary.[201]5 E.A.D. at 66.

***88** The NPDES regulations support a reading that discourages application of rules adopted after permit issuance. In describing the requirements the Region should impose, the regulations state that "an applicable requirement is a statutory or regulatory requirement (including any interim final regulation) which takes effect *prior* to the issuance of the permit. "40 C.F.R. § 122.43(b)(1) (emphasis added); *see Phelps Dodge*, 10 E.A.D. at 478 n.10. The NPDES regulations provide that "issuance" of a permit occurs when the Regional Ad ministrator issues a final permit decision after the close of the comment period. *See*40 C.F.R. § 124.15(a).

Furthermore, we note that at one time, the part 124 regulations contained a provision that allowed a party, during the pendency of an evidentiary hearing, to file a motion with the Presiding Officer requesting that a new regulatory requirement be applied t o its permit. *Homestake Mining*, 2 E.A.D. at 200 n.8 (discussing 40 C.F.R. § 124.86(c) (1986)). The decision of whether to do so was within the Presiding Officer's discretion. *Id.* The Chief Judicial Officer noted in *Homestake Mining* that this regulation was intended to grant some flexibility from the general principle articulated in *U.S. Pipe* that disfavored new rules from being applied after an initial decision was issued. *Id.* This provision allowing for a motion to request application of

a new rule was deleted when the part 124 regulations governing evidentiary hearings were removed in their entirety from part 124. *See In re USGen New England, Inc.* , Order Denying Motion for Evidentiary Hearing, NPDES A ppeal No. 03 -12, slip op. at 6 (EAB July 23, 2004), 11 E.A.D. ___. While not central to our analysis, this deletion raises a question of whether discretion to apply a new rule still exists absent circumstances where the rule specifically states that it applies retroactively.

Upon consideration of the Phase II Rule and the facts and circumstances of this case, we conclude that it is not appropriate to remand the Permit to the Region for it to reconsider the Permit in light of the new application of BTA in the Phase II Rule for several reasons. First, as we already noted above, it is clear from the preambles to both the proposed and final rules that t he rule was not intended to be applied retrospectively to pending permits but was only intended to apply to t hose permits for which applications were submitted after the effective date of the permit. *See, e.g.*, Phase II Rule, 69 Fed. Reg. at 41,593; *see also*Proposed Phase II Rule, 67 Fed. Reg. at 17,124. Thus, the decision not to apply any new interpretations to pending applications was already made in the adoption of the rule itself, presumably for reasons of efficiency and finality.

***89** Second, these permit proceedings have been ongoing since at least early 1998. *See* DPDD at 6 -1 (renewal application submitted in January 1998). The Agency has spent over six years and significant resources and efforts in consideri ng the permit renewal application (and associated proceedings) using the existing standards. [202] The other participants have likewise spent significant time and resources in participating, commenting, and/or addressing various permit-related issues.[203]

In addition, because of th e already -lengthy proceedings, BPS is currently operating, for the most part, under a permit that "expired" in 1998.[204]*See id.* If we were to remand the permit to the Region and require application of the new BTA standard, this would likely lead to another lengthy delay, thereby leaving the plant operating under an outdated permit for another 5 -10 years, with the concomitant harm, as described in the administrative record, to the Mount Hope Bay ecosystem during this time. This is true for several reasons: first, the terms of the Phase II Rule itself would likely lead to delays because the rule apparently allows for several years of study prior to implementing new permit limitations, *see*Phase II Rule, 69 Fed. Reg. at 41,631; second, the Phase II Rule is currently being challenged in the federal court system, which could also cause significant delays in the implementation of the rule, *see* Oral Arg. Tr. at 77; and third, as we have already mentioned, it is not clear that the BPS could meet the performance standards set out in the new Phase II Rule with open-cycle cooling, *see supra* note 194.

In sum, we conclude that although during administrative review, the Agency has the discretion to remand permit conditions for reconsideration in light of legal requirements that change before the permit becomes final agency action, in this case, it is not appropriate to remand the Permit to the Region for it to reconsider the Permit in light of the approach to BTA contained within the Phase II Rule.

2. *Issues Surrounding the Region's Approach to Utilizing Massachusetts' and Rhode Island's WQSs in Establishing the BPS Permit's Cooling Water Withdrawal Limitations*

a. *Participants' Arguments*

In the Petition, Dominion presented two general arguments regarding the Region's reliance on state WQSs. The first one challenged the Region's interpretation of the statute, asserting that CWA section 316(b) sets the standard for BPS, i.e., BTA for minimizing adverse environmental impacts, and that relying on other CWA statutory provisions, such as sections 301 or 401, is contrary to principles of statutory construction favoring application of specific provisions over the more general. Petition at 34 -35; DEBP Suppl. Br. at 38. Petitioner's second general argument challenged the Region's reading and application of each of the state's WQSs. Petiti on at 35-36. At oral argument, Petitioner clarified its arguments, significantly narrowing its arguments on the state WQSs issue. Oral Arg. Tr. at 23 -24. In particular, when questioned about its statutory construction arguments in light of certain recent c ourt decisions, Petitioner's attorney stated that it was no longer raising the "generic" statutory construction issue; rather, it was only challenging the specific issue of whether the Region "may defend the cooling water intake limitations in the permit o n the basis that they are necessary to assure compliance with the [WQSs] of Massachusetts and Rhode Island. "[205]*Id.* at 23.Because Petitioner has dropped its statutory construction argument, we will not provide a detailed analysis of the issue in this opinion.[206]

***90** Petitioner and UWAG generally argue that the Region "misreads and misapplies * * * the language and scope of the

Massachusetts and Rhode Island [WQSs]" to justify the cooling water withdrawal limits it imposed in the Permit. Petition at 34; *accord* DEBP Suppl. Br. at 35-40; *see also* DEBP Reply at 19-25; UWAG Br. at 29-37; Oral Arg. Tr. at 23-24. They assert that nothing in either Massachusetts' or Rhode Island's WQSs precludes cooling water withdrawals. Petition at 34-35; *accord* DEBP Suppl. Br. at 37-39; *see also* UWAG at 31. In fact, according to Petitioner, Rhode Island's WQSs explicitly authorize cooling water withdrawals in Mount Hope Bay by providing that both SA and SB waters - the designations for Mount Hope Bay - "shall be suitable for * * * industrial cooling."[207] Petition at 35 (citing R.I. Code R. 12 190 008.B.2.a, .b).

Petitioner also argues that the Region improperly "create[d] and implement[ed]" Massachusetts' WQSs without the state's request.[208] DEBP Suppl. Br. at 36; *see also* UWAG at 30-31. Petitioner contends that neither Massachusetts' signing of the permit nor its section 401 certification support the Region's position that the permit limits are based on Massachusetts' law because Massachusetts' certification did not "request any particular limits on [BPS's] cooling water withdrawals to meet [WQSs]," DEBP Suppl. Br. at 37, or state that the ones the Region imposed "were necessary to comply with Massachusetts law," Reply at 20. At oral argument, Petitioner also argued that Massachusetts has subsequently claimed before the state court - where a parallel appeal regarding the state permit has been filed - that the limits were based on federal rather than state law. Oral Arg. Tr. at 25.

Finally, Petitioner claims that the Region erred, as a legal matter, in using Rhode Island WQSs to regulate a *withdrawal* of water occurring in Massachusetts. Petition at 35; *see* Oral Arg. Tr. at 24. Petitioner argues that section 401(a)(2) of the Act only authorizes Rhode Island to object to effects on WQSs resulting from "discharges," not intakes. DEBP Suppl. Br. at 39; *see also* UWAG at 32. Thus, Petitioner argues, if Rhode Island would have no authority under the Act to impose these limits, then the Region should not be authorized on its own initiative to do so. Petition at 36; *accord* DEBP Suppl. Br. at 39; Oral Arg. at 29 (citing *Int'l Paper v. Ouelette*, 479 U.S. 481 (1987)). Petitioner also questions the Region's reliance on Rhode Island's WQSs to regulate the loss of fish at BPS's intakes in Massachusetts waters based on the conclusion that Rhode Island's waters will thereby be a less protective habitat for fish. DEBP Suppl. Br. at 39. Petitioner claims that such an approach would create an expansive regulatory standard. *Id.*; UWAG Br. at 35. Finally, Petitioner argues that the Region's reliance on Rhode Island's WQSs is precluded by the plain language of the standards themselves. DEBP Suppl. Br. at 39.

***91** The Region responds to Petitioner's arguments first by maintaining that the CWIS limitations in the Final Permit were established based on its determination of BTA under section 316(b). Response at 91-92. The Region then states that it "also concluded that only intake limitations based on closed-cycle cooling were likely to result in compliance with the states' [WQSs]" and that its conclusions were "confirmed" by letters from Massachusetts and Rhode Island. *Id.* at 92; Reg. Suppl. Resp. at 36-43; *see also* A.R. 3247, Ex. 5 (MA DEP, Water Quality Certification for NPDES Permit MA 0003654 (Sept. 23, 2003)) [hereinafter MA Water Quality Certification]; A.R. 1152, Ex. 6 (RIDEM, Notice of CWA Discharge Permit for a Massachusetts Facility that May Affect the Quality of the Waters of the State of Rhode Island (Sept. 18, 2002) [hereinafter RI Section 401(a)(2) Letter].

Specifically with respect to the applicability of Massachusetts' WQSs, the Region argues that CWA sections 401(a), (d), and 301(b)(1)(C) "authorize the Region to ensure that cooling water withdrawals are consistent with Massachusetts' designated uses for Mount Hope Bay." Reg. Suppl. Resp. at 36. According to the Region, the state's designated uses for Mount Hope Bay include use of the Bay's waters to provide "excellent habitat for fish [and] other aquatic life" and recreational fishing. *Id.* (citing Mass. Regs. Code tit. 314, § 4.05(4)(a)). The Region also points out that "[t]he Supreme Court has held that [section] 401 may be invoked to protect designated uses." *Id.* at 37 (citing *PUD No. 1 v. Wash. Dep't of Ecology*, 511 U.S. 700, 723 (1994)). Thus, argues the Region, even if Massachusetts' WQSs do not specifically address cooling water withdrawals, section 401 would support intake limits to protect its designated uses in Mount Hope Bay. *Id.*

The Region also maintains that, contrary to Petitioner's assertions, permit decisions under CWA section 316(b) *are* subject to section 301(b)(1)(C) as well as section 401.[209] Reg. Suppl. Resp. at 36-40; *see also* CLF Br. at 12-14 (arguing why the section 301(b)(1)(C) reference to state WQSs applies to CWISs). The Region argues that it was thus "obliged under § 301(b)(1)(C) to ensure that its NPDES permit limits satisfy applicable state water quality requirements." Reg. Suppl. Resp. at 38. As further support for its position that it was required to ensure compliance with WQSs, the Region points to Agency regulations at 40 C.F.R. §§ 122.4(d) and 122.44(d).[210] Response at 95 n.67, 97; Reg. Suppl. Resp. at 40; *see also* RTC at V-5 to-6.

***92** Regarding Petitioner's arguments about Massachusetts' certification, the Region asserts that even though Massachusetts' certification "does not explicitly address whether any conditions may be made less stringent, " Massachusetts issued a permit under state law that contained intake limit conditions iden tical to those in the Final Permit. Reg. Suppl. Resp. at 37. The Region also argues that Massachusetts issued its permit nearly contemporaneously with its certification indicating that "the intake limits were consistent with and necessary to ensure complia nce with state WQSs. "[211] *Id.* at 38.Thus, according to the Region, the Region acted reasonably in concluding that the intake limits could not be made less stringent and still be in compliance with Massachusetts' WQSs. *Id.*

Specifically with respect to arguments raised about Rhode Island's WQSs, the Region first argues that it may rely upon Rhode Island's designated uses (i.e., narrative standar ds) to impose conditions in the permit. [212] Response at 95 -96; Reg. Suppl. Resp. at 42. The Region disagrees with Petitioner and UWAG's posit ion that it is solely relying on section 401(a)(2) and *PUD*.Reg. Suppl. Resp. at 40. The Region asserts that it also is relying on the text and purpose of the Act; CWA section 301(b)(1)(C); EPA regulations at 40 C.F.R. §§ 122.4(e), 122.44(d)(1); and the Supreme Court's decision in *Arkansas v. Oklahoma*, 503 U.S. 91 (1992).*Id.* at 40-41.

The Region explains that Rhode Island sent it a letter indicating that the Draft Permit's intake limitations were needed to comply with the state's WQSs and in fact more restrictions were needed. Response at 95 -96. The letter went on to state, however, tha t Rhode Island would not object to the permit despite the potential violations. *Id.* at 96. The Region made a change in the permit based on this letter, prohibiting the use of once -through cooling during the winter flounder spawning season, and then det ermined that with this change, the Final Permit would be protective of Rhode Island's WQSs. *Id.* The Region maintains that Rhode Island's WQSs can be considered even where the discharge is from a Massachusetts facility. Petition at 97 -98. The Region argues t hat it is reasonable to interpret water quality requirements of downstream states to include the state's WQSs, which in turn includes designated uses. *Id.* at 97.The Region further contends that there is nothing to suggest that section 401(a)(2) was intende d to be limited to WQSs related to water chemistry or water temperature as opposed to biological effects. *Id.* at 98.Finally, the Region claims that Petitioner's argument about the Region's interpretation being applicable to all the states on the Eastern se aboard is a red herring. *Id.* The Region argues that in this case, there is no question of a "distant plant's marginal effects on migratory species transiting the entire eastern seaboard. "*Id.* Instead, Rhode Island shares the immediate waterbody that is impacted by the plant. *Id.*

***93** Massachusetts, in response to Petitioner's arguments, asserts that it does have the authority to regulate cooling water withdrawals under section 401 of the CWA as well as under Massachusetts l aw. MA Suppl. Br. at 5; *see also* MA Br. at 6. Massachusetts states that, although it does not have a technology -based standard for CWISs, it does have water quality standards in the form of designated uses for Mount Hope Bay. MA Br. at 6 -7, 9-10. In partic ular, the affected areas of the Bay are either designated as Class SA or SB waters. *Id.* at 10.Massachusetts' designated uses for Class SA waters include "an excellent habitat for fish, other aquatic life and wildlife" and for Class SB waters include a "habitat for fish, other aquatic life and wildlife."*Id.; accord* Oral Arg. Tr. at 70.

Regarding its certification, Massachusetts asserts that its section 401 Water Quality Certification "affirmed that the CWIS flow limit in the Permit is necessary to ensure c ompliance with state [WQSs], " in particular the attainment of its designated uses. MA Suppl. Br. at 6; *accord* MA Br. at 7, 11; *see also* Oral Arg. Tr. at 7 (stating that Massachusetts' cooling water intake determination was based on whether the Region's tec hnology-based limit "would comply with " Massachusetts' WQSs). During oral argument, Massachusetts' counsel clarified that "the certification did not provide that the limit could not be made any less stringent. "*Id.* at 74.Massachusetts also stated at oral ar gument that "we do not regard our certification as saying that the limit cannot be made any less stringent in the sense of being a State -only enforceable condition."*Id.* at 76;*see also id.* at 72-73 (indicating that the state generally "would not identify whether there is a less stringent limit" where EPA had established a technology-based standard).

Like Massachusetts, Rhode Island argues that its WQSs should apply to the section 316(b) permit limitations. RI Br. at 10. Rhode Island maintains that the goals of the Act, as identified in sections 101 and 301, 33 U.S.C. §§ 1251, 1311, "make clear that states' authority to impose more stringent water quality limitations was an authority and right preserved by Congress to the states."RI Br. at 13. Rhode Island also cites CWA sections 401(a)(2), 401(d), and 510, 33 U.S.C. §§ 1341(a)(2) , (d), 1370, as well as 40 C.F.R. § 125.84(e) , in support of its arguments that state WQSs, including it s own, apply to section

316(b) determinations. RI Br. at 12 -15; RI Suppl. Br. at 3 -4. Rhode Island further argues that even if its WQSs were not applicable to BPS's Final Permit under section 401(a)(2), the cross -reference to section 301(b)(1)(C) in both C WA sections 401(d) and 316(b) should provide authority to the Agency to consider other such factors such as Rhode Island's WQSs. RI Suppl. Br. at 5-6 (relying on analysis in *Riverkeeper, Inc. v. U.S. EPA*, 358 F.3d 174 (2d Cir. 2004)).

***94** In addition to arguing that its WQSs should apply to the section 316(b) -related conditions in BPS's Final Permit, Rhode Island also disputes Petitioner's interpretation of the state's water quality regulations. RI Br. at 10. Rhode Island asserts that even though "industrial cooling" is one of the uses designated by its WQSs, this use cannot be allowed at the expense of other designated uses, such as use for "shellfish harvesting" and for "fish and wildlife habitat," and that the water "shall have good aesthetic value." RI Br. at 10 (quoting R.I. Code R.12 190 008B.2.a., .b (Rhode Island's SA and SB water quality designations)). Rhode Island explains that under its regulations, "aesthetics requires that all water be free from, among other things, changes to the physical, chemical, or biological conditions to such a degree as to create a nuisance or interfere wit h the existing designated uses."RI Br. at 11 (quoting R.I. Code R. 12 190 008 .D.1.b). According to Rhode Island, all waters in the state must be free from anthropogenic activity that "may affect the suitability of state waters for their respective designated uses."*Id.* Rhode Island asserts that it has a strong interest in protecting its water bodi es from pollutants and anthropogenic activities[213] that impacts its waters and that "[t]o suggest a distinction between effects on fish [] a nd effects on water quality, as [Petitioner] has done, when determining whether to apply a state's water quality criteria in a permit revie w, is ridiculous."*Id.* at 12.

Finally, Rhode Island claims that the Region did rely upon *Rhode Island's* interpretation of its own WQSs. RI Br. at 12. Rhode Island asserts that the cooling water intake limits required by the Final Permit are required to satisfy Rhode Island's WQSs as evidenced by the statements in its section 401(a)(2) letter to the Region.[214]*Id.*(citing RI Section 401(a)(2) Letter).

CLF and KRC also disagree with Petitioner and UWAG, both arguing that NPDES permit limitations under section 316(b) permit limitations must comply with state WQSs. [215] CLF Suppl. Br. at 20-26; KRC at 3; *cf.* STB Br. at 10 (asserting that the Region correctly applied section 316(b) and arguing that state permit programs are autonomous); TRWA at 1 (agreeing with the briefs of the Region and the states). CLF more particularly argues that "Massachusetts' certification must include any conditions necessary to ensure compliance with state WQS[s], and that EPA has an independent obligation as well. "CLF Suppl. Br. at 22. CLF points out that the Region acknowledged this obligation in the administrative record. *Id.* at 21 (citing to DPDD at 5-5; RTC at V-6). CLF also cites several Agency and federal circuit court cases for this proposition. CLF Suppl. Br. at 22-23 (citing *e.g., In re City of Moscow*, 10 E.A.D. 135, 151 (EAB 2001); *In re City of Jacksonville*, 4 E.A.D. 150, 157-58 (EAB 1992); *In re Ina Rd. Water Pollution Control Facility*, 2 E.A.D. 99, 100 (CJO 1985); *Riverkeeper*, 358 F.3d at 200-01; *NRDC v. U.S. EPA* , 279 F.3d 1180, 1187 (9th Cir. 2002) ; *Dubois v. U.S. Dep't of A gric.*, 102 F.3d 1273, 1301 (1st Cir. 1996)).

***95** With respect to Rhode Island's WQSs, CLF argues that section 401(a)(2) does allow for an affected downstream state to impose conditions on the intake design. CLF Suppl. Br. at 25. CLF asserts that the last two sentences of that statutory provision require EPA to condition a permit "in such manner as may be necessary to insure compliance with applicable water quality requirements," and that these provisions are not restricted to discharges. *Id.* (citing CWA § 401(a)(2)).

b. *Analysis*

As an initial matter, we note that the Act requires the Agency to apply the more stringent of the applicable technology -based or the applicable WQS-based standards in an NPDES permit, including in connection with cooling water intake limitations.[216] CWA §§ 301(b)(1)(C), 316(b), 33 U.S.C. § 13 11(b)(1)(C), 1326(b); *accord*40 C.F.R. § 122.4(d) ; *see PUD No. 1 v. Wash. Dep't of Ecology*, 511 U.S. 700, 711-13 (1994). For BPS's permit, the Region has stated that its CWIS -related limitations are based on its determinations under section 316(b) and, *in addition*, on the states' WQSs. *See* RTC at IV-12; *see also* DPDD at 7-27 to-28,-128 to-129; Response at 91-92. None of the participants have challenged the veracity of this assertion. [217] Because we have concluded that the Region did not err in establishing CWIS -related conditions based on the technology -based standard of section 316(b), *see supra* Part VI.B.1.b.iii, even if we were to conclude here that the Region erred by *additionally* relying on the states' WQSs in deciding that it could not make the limitations any less stringent, this would not mean that t he Final Permit's CWIS -related conditions are invalid. In other words, if we were to find that the Region erred and that the

states' WQSs would allow less stringent limitations than the technology-based limitations, this would have no practical effect because the Region would still be required to impose the more restrictive of the two, which would be the technology -based limits. With this in mind, we now turn to the arguments concerning the states' WQSs, focusing first on the arguments raised concerning Massachusetts' WQSs and then the arguments raised with respect to Rhode Island's.

i. *Issues Concerning Massachusetts' WQSs*

a. *Does Massachusetts Have Potentially Relevant WQSs*?

Petitioner and UWAG challenge the Region's reliance on Massachusetts' WQSs as a basis for the cooling water limits in the Final Permit on several bases. We first consider Petitioner's claim that Massachusetts' WQSs do not contain a provision specifically addressing cooling water withdrawals. DEBP Suppl. Br. at 36; Petition at 35. While it is true that Massachusetts does not have any WQSs containing specific numeric criteria regulating cooling water withdrawals, [218] it does designate one class of marine and coastal waters - SC waters - as "suitable for certain industrial cooling and process uses. "Mass. Regs. Tit. 314, § 4.05(4)(c); *see also id.* § 4.05(3)(b) (designating Class B inland waters as suitable for "compatible industrial cooling and process uses "). Notably, no portion of Mount Hope Bay drainage area is considered "SC." *See id.* § 4.06(3), tbl. 15. Furthermore, Massachusetts' WQSs do have designated uses that apply to Mount Hope Bay that b ear on this issue. [219]Mass. Regs. Code tit. 314, § 4.05(4)(a), (b), 4.06(3), tbl. 15. Among the designated uses for Mount Hope Bay is the use of the water body as a "habitat for fish, other aquatic life and wildlife " and as "an excellent habitat for fish, other aquatic life and wildlife."*Id.* § 4.05(4)(a), (b). Thus, although Massachusetts WQSs do not have explicit numeric criteria setting cooling water intake limits, the designated uses would apply to cooling water withdrawals in Mount Hope Bay if the withdrawals could impact the water body's ability to provide a "habitat" or "excellent habitat " for fish, ot her aquatic life, and wildlife. Petitioner's argument, therefore, although not expressly framed this way, is essentially a question of whether the Region (an d Massachusetts) may rely on Massachusetts' designated uses, where no numeric criteria exist, to im pose cooling water intake limits at BPS.[220]

***96** The Supreme Court definitively addressed this issue in *PUD No. 1 v. Washington Department of Ecology* , 511 U.S. 700 (1994). In PUD, the petitioners argued that they could be required to comply only with specific numeric criteria and not designated uses. *Id.* at 714. The Court looked at CWA section 303, which governs the establishment of state WQSs and requires each state to "institute comprehensive water quality standards establishing water quality goals for all intrastate waters."[221]*Id.* at 704 (citing CWA § 303, 33 U.S.C. § 1313). The Court decided that the text of the statute clearly indicates that WQSs are made u p of two components: water quality criteria (i.e., numeric criteria) and designated uses. *Id.* at 714.The Court thus concluded that "under the literal terms of the statute, a project that does not comply with a designated use of the water does not comply with the applicable [WQSs]."*Id.* at 715.Consequently, a state, in its certification, may require "that an applicant operate the project consistently with * * * the designated uses of the water body. "*Id.* at 715;*see also In re Gov't of D.C. Mun. Separate Sewer Sys.* , 10 E.A.D. 323, 343 n.23 (EAB 2002) (stating that the region may impose permit conditions to comply with the narrative provisions of the state's WQSs). We therefore conclude that M assachusetts' designated uses, including the requirement that Mount Hope Bay provide an excellent habitat for fish and other aquatic organisms, could potentially be relied upon to regulate cooling water intakes.[222]

b. *Were the CWIS Conditions Attributable to State Certification*?

We next consider Petitioner's and UWAG's contention that Massachusetts did not interpret its WQSs to impose requirements on cooling water withdrawals in its 401 certification. [223] DEBP Suppl. Br. at 36; UWAG Br. at 30; *see also* Petition at 35. We read this to be a claim that the cooling water intake conditions in the Final Permit are not properly "attributable" to Massachusetts' certification.

When the Agency is the NPDES permit issuer, section 401(a)(1) authorizes the state in which the point source is located (here, Massachusetts) to provide a water quality certification validating the permit's compliance with applicable federal and state wate r pollution control standards before the federal permit may be issued. [224]33 U.S.C. § 1341(a)(1) ; 40 C.F.R. § 124.53(a); *In re City of Moscow* , 10 E.A.D. 135, 151 (EAB 2001) ; *see also*PUD, 511 U.S. at 707; *Riverkeeper*, 358 F.3d at 201.Such certification "shall set forth any effluent limitations and other limitations and monitoring requirements necessary to

assure that any applicant * * * will comply with any ap plicable effluent limitations and other limitations, under section 1311 or 1312 of this title [and several other sections not relevant to this case], and with *any other appropriate requirement of State law* set forth in such certification."CWA § 401(d), 33 U.S.C. § 1341(d) (emphasis added).

***97** The Agency's regulations implementing this statutory provision require that a state's certification be in writing and that it include "conditions which are necessary to assure compliance with * * * appropriate requirements of State law, " and "[a] statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of the State law, including [WQSs]. "40 C.F.R. § 124.53(e)(1) , (3). Permit conditions that arise from this certification are considered to be "attributable to State certification," *In re Gen. Elec. Co., Hooksett, N.H.* , 4 E.A.D. 468, 471 (EAB 1993), and such conditions cannot be challenged in a permit appeal before the Board, 40 C.F.R. § 124.55(e) ; *In re Boise Cascade Corp.*, 4 E.A.D. 474, 483 n.7 (EAB 1993).

Upon examination of Massachusetts' section 401 certification letter, we conclude that the permit's cooling water intake conditions are n ot attributable to state certification. The only sentence in Massachusetts' 401 certification that addresses its position with respect to the section 316(b) limits is its statement that '[t]he [MA DEP] is satisfied that the final permit's requirements for [BPS's] CWIS, imposed by EPA pursuant to its authority in Section 316(b), adequately address the entrainment and impingement impacts from the CWIS and will allow for the attainment of designated uses of Mount Hope Bay."[225] MA Water Quality Certification at 2. At oral argument, when questioned on this very issue, counsel for Massachusetts admitted that Massachusetts' statement does not indicate that the permit conditions are *necessary* to meet its WQSs or that they cannot be made any less stringent and comply with its WQSs. *E.g.*, Oral Arg. Tr. at 74 (stating that "we do not regard our certification as saying that the limit cannot be made any less stringent in the sense of being a State -only enforceable condition" and that "the certification did not provide that the limit could not be made any less stringent "); *see also* MA Water Quality Certification at 2. The statement merely indicates that the CW IS limits imposed by EPA do not need to be made more stringent to meet its WQSs. [226]*See* MA Water Quality Certification at 2; Oral Arg. Tr. at 72-76. The Region acknowledged as much at oral argument. Oral Arg. Tr. at 59 ("[I]t's why you didn't see us arguing that the permit on appeal should be sent to the Commonwealth of Massachusetts because the limits were attributable to state certification. The state certification did not go quite that far.").[227]

Therefore, we conclude that the CWIS permit requirements are not attributable to State certification and the Region cannot rely on the certification as a reason for imposing those CWIS limitations.

c. *Does EPA Have the Independent Authority to Ensure that BPS's Permit Meets Massachusetts' WQSs*?

***98** Petitioner and UWAG next argue that the Region had no independent authority to impose cooling water intake conditions based on Massachusetts' WQSs, where such conditions can not be attributable to Massachusetts' 401 certification.[228] Petitioner and UWAG are incorrect.

As we have explained in previous cases, the Region's duty under CWA section 401 to defer to considerations of State law is intended to prevent EPA from *relaxing* any requirements, limitations, or conditions imposed by the State law. *In re City of Jacksonville*, 4 E.A.D. 150, 157 (EAB 1992) ; *In re City of Moscow* , 10 E.A.D. 135, 151 (EAB 2001) ; *accord In re Ina Rd. Water Pollution Control Fa cility*, 2 E.A.D. 99, 100 (CJO 100) ; *see also Roosevelt Campobello Int'l Park Comm'n v. EPA* , 685 F.2d 1041, 1056-57 (1st Cir. 1982) (holding that the Agency could not amend an NPDES permit by deletin g conditions imposed by the state via the certification process). However, "[w]hen the Region reasonably believes that a state [WQS] requires a more stringent permit limitation than that specified by the state, the Region has an *independent duty* under section 301(b)(1)(C) of the CWA to include more stringent permit limitations. "*Moscow*, 10 E.A.D. at 151; *accord In re City of Marlborough*, NPDES Appeal No. 04-13, slip op. at 23 n.22 (EAB Aug. 11, 2005), 11 E.A.D. ___; *Jacksonville*, 4 E.A.D. at 158; Ina Rd., 2 E.A.D. at 100 (stating that such "duty is independent of State certification under [section] 401 ");[229]*see also NRDC v. U.S. EPA* , 279 F.3d 1180, 1186 (9th Cir. 2002) ("Under the CWA, the EPA has its own independent obligation to determine whether a permit will comply with the states' [WQSs]. "); *Campobello*, 684 F.2d at 1056 (indicating that, pursuant to section 301(b)(1)C), "even in the absence of state certification, EPA would be bound to include in the federal permit 'any more stringent limitations * * * established pursuant to any State law or regulations (under authority preserved by section 510)"').[230] The Agency's regulations likewise interpret the statute to impose such an independent duty upon the Agency when

it issue an NPDES permit. 40 C.F.R. §§ 122.4 , 122.44(d)(1), (5); *see In re Gov't of D.C. Mun. Separate Sewer Sys.* , 10 E.A.D. 323, 329 (EAB 2002) . Early General Counsel advis ory opinions also interpreted the CWA in this way. *E.g.*, 2 Op. EPA Gen. Counsel 222, 226 -29 (1976) (stating that when EPA issues an NPDES permit in the absence of certification, it must apply "any more stringent limitation * * * established pursuant to any State law or regulation * * * under section 301(b)(1)(C)"); 1 Op. EPA Gen. Counsel 219, 220 -223 (1975) (concluding that the Agency is required to apply state WQSs, including narrative standards, in the absence of a state certification). Significantly, the Supreme Court, in *Arkansas v. Oklahoma*, found that "the statute clearly does not limit EPA's authority to mandate [] compliance " with a state's WQSs when *the Agency* issues an NPDES permit. 503 U.S. 91, 105 (1992). The Court consequently held that these regulations "constitute a reasonable exercise of the Agency's authority. "*Id.*;*see also id.* at 110 (explaining that 40 C.F.R. § 122.4(d)"effectively incorporates into federal law those state -law standards the Agency reasonably determines to be applicable").

***99** We thus conclude that, under the CWA and the Agency's implementing regulations, the Region has not only independent authority but an independent obligation to ensure that the Final Permit met Massachusetts' WQSs.

d. *Did the Region Err in Concluding that the Final Permit's Intake Limits C ould Not Be Made Less Stringent Based on Massachusetts' WQSs?*

The final question to be resolved is whether the Region "reasonably believed " that Massachusetts' WQSs required the CWISs-related permit conditions. *In re City of Moscow* , 10 E.A.D. at 151; *see also Arkansas*, 503 U.S. at 110. We conclude that it did.

As we found earlier, Massachusetts' designated uses could potentially be relied upon to r equire CWIS limitations. *See supra* Part VI.B.2.b.i.*a*. The Region indeed relied upon these designated uses in determining that the CWIS limits could not be less stringent. RTC at V-11. The Region discussed its analysis of Massachusetts' WQSs in th e Determinations Document and in its Response to Comments document. *See* DPDD at 7-27 to-28,-128 to-129; *see also* RTC at V-11. The Region quoted from Massachusetts' WQS and then concluded that "[t]he CWIS-related requirements should not interfere with attai ning that use designation," i.e., the designation that portions of Mount Hope Bay are to be an "excellent habitat for fish." DPDD at 7-27. The Region stated that it believed that the state WQSs were being violated by the levels of entrainment and impingeme nt by BPS's current CWISs, i.e., "the entrainment and impingement of trillions of organisms " and the taking of large percentages of a variety of commercially and recreationally important fish species. [231] DPDD at 7 -125,-129. The Region went on to conclude that "the Closed-Cycle Entire Station option is the only alternative currently under consideration that will satisfy these standards in the future."*Id.* at 7-125,-129.The Region additionally noted that the other options that had been considered "will not reduce intake capacity sufficiently to allow the likely recovery of the collapsed fish species populations in Mount Hope Bay."*Id.* at 7-128.

The Region reiterated its findings and conclusions in its Response to Comments document in even more detailed and stronger terms. RTC at V-11 to-13. The Region stated, in part:
EPA draws three conclusions related to permit conditions for the BPS [CWISs] an d the consistency of these conditions with Massachusetts [WQSs]. First, EPA concludes that the designated uses for fish habitat and recreational fishing for the Massachusetts SA and SB portions of the Mount Hope Bay estuary (including the Lee and Taunton R ivers) are not currently being attained owing in part to entrainment and impingement of organisms by BPS's withdrawals of water from the estuary for cooling. Second, EPA concludes that the cooling water intake limitations proposed in the new NPDES permit f or BPS will remove the plants's interference with the attainment of the SA and SB designated uses for the source waters of the Mount Hope Bay estuary. *Third, EPA determines that any significantly less stringent intake limitations would likely interfere with attaining these uses and, therefore, the Agency cannot issue a permit with significantly less stringent intake limits as a matter of State water quality requirements under CWA § 301(b)(1)(C)*. These three conclusions are discussed below.

***100** EPA concludes based on current information that the existing intake -related permit conditions for BPS do not comply with Massachusetts [WQSs]. Under the facts of this case, it is inconsistent with providing either "excellent" fish habitat (SA waters) or an otherwise healthful "fish habitat" (SB waters) to have a CWIS located in the waterbody that withdraws and kills trillions of organisms including fish eggs, fish larvae, and juvenile and adult fish from the waterbody. This is so w hen the

entrainment and impingement losses are contributing to the much diminished, unhealthful state of the overall community of organisms in the waterbody and these losses remove a significant percentage of the local population of certain species of fis h (e.g., winter flounder).

RTC at V-11 to-12 (internal footnotes omitted) (emphasis added).

Upon examination of the Region's analysis, including its exhaustive discussion of the impacts of BPS' s impingement and entrainment activities on the fish and other aquatic organisms in Mount Hope Bay, we do not find the Region's interpretation of Massachusetts' WQSs to be unreasonable. Petitioner has not persuaded us otherwise.

In sum, we conclude that the CWIS-related limitations in the Final Permit could not be attributed to Massachusetts' 401 certification because Massachusetts' certification did not indicate that the permit conditions were necessary or that they co uld not be made any less stringent a nd comply with its WQSs. Nevertheless, the Region had independent authority and an independent duty to ensure that Massachusetts' WQSs were implemented via the permit's conditions if it reasonably believed that Massachusetts' WQSs require such a condition. We find that the Region reasonably determined that Massachusetts' WQSs, in the form of its designated uses, required the imposition of the CWIS -related limitations in the Final Permit. Thus, we do not find clear error in the Region's conclusion that Massa chusetts' WQSs constitute a second, additional, independent basis for the cooling water intake limits in BPS's permit.

ii. *Issues Concerning Rhode Island's WQSs*

Petitioner and UWAG also challenge the Region's reliance on Rhode Island's WQSs as an addi tional basis for imposing the conditions related to cooling water intakes. Petition at 35-36; DEBP Supp. Br. at 38-40; UWAG Br. at 32-37; Oral Arg. Tr. at 28-30. Petitioner's and UWAG's principal argument appears to be that, because Rhode Island may only p articipate in the permitting of an out-of-state facility pursuant to section 401(a)(2), and because this section only allows such an affected state to object to effects on its WQSs resulting from a *discharge*, the *Region's* ability to regulate cooling water *intake* based on Rhode Island's WQSs (since intake is not a discharge) should be equally limited. DEBP Suppl. Br. at 38 -39; UWAG Br. at 32-35; *see also* Petition at 35-36; Oral Arg. Tr. at 29 (citing *Int'l Paper v. Ouelette*, 479 U.S. 481 (1987)).

***101** Significantly, their argument primarily focuses on interpretations of CWA sections 401(a)(2) and 401(d), as well as on the Supreme Court's decision in *PUD* and *International Paper*.The Region, however, relied o n several additional statutory and regulatory provisions for its determination, including CWA section 301(b)(1)(C) and 40 C.F.R. §§ 122.4(d) , 122.44(d)(5), and on the Supreme Co urt's decision in *Arkansas v. Oklahoma*.RTC at V-1,-4,-5,-6,-14; *see also* RTC at V-6 to-9 (discussing the relationship between state WQSs and CWISs in connection with several CWA provisions, including sections 101(a) and (b), 301, 401, 510, and several regulatory provisions); DPDD at 7-27 to-28.

We first focus our analysis on CWA section 301(b)(1)(C) and the Agency's implementing regulations at 40 C.F.R. §§ 122.4(d) and 122.44(d)(1) and (5), as well as the Supreme Court's decision in *Arkansas v. Oklahoma* , 503 U.S. 91 (1992) , and conclude that the Region did not err in relying upon these statutory and regulatory provisions in imposing conditions based upon Rhode Is land's WQSs. Because we rely upon these provisions, we need not address the potentially difficult statutory interpretation and construction issues raised by CWA sections 401(a)(2) and 401(d). *Cf. Arkansas*, 503 U.S. at 104-05 (considering only the question of whether, under the CWA, the Agency had the statutory *authority* to mandate that a facility comply with a downstream state's WQSs rather than the more difficult question of whether the Agency was *required* to apply the downstream state's WQSs).

The Agency has interpreted the CWA to prohibit it from issuing an NPDES permit "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of *all affected States* ."40 C.F.R. § 122.4(d) (emphasis added); *accord Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992) (noting that the regulation dates back from 1973). The Agency has prom ulgated two other regulations with similar requirements. The first requires each NPDES permit to include conditions necessary to "[a]chieve [WQSs] established under section 303 of the CWA, including State narrative criteria for water quality. "40 C.F.R. § 122.44(d)(1) . The second requires each NPDES permit to '[i]ncorporate any more

stringent limitations * * * established under Federal or State law or regulations in accordance with section 301(b)(1)(C). "40 C.F.R. § 122.44(d)(5).

***102** These regulations, and the Agency's reliance upon and application of them, were considered by the Supreme Court in a context very similar to this case. In *Arkansas v. Oklahoma*, the Agency had issued an NPDES permit to a city in Arkansas that was about 39 miles upstream from Oklahoma. 503 U.S. at 94. The EPA's Chief Judicial Officer had determined that, under the Act and the Agency's regulations, in particular CWA section 301(b)(1)(C) and 40 C.F.R. § 122.4(d), the Agency was required to impose conditions in the Arkansas city's permit to comply with Oklahoma's WQSs. *Id.* at 96;*see also In re City of Fayetteville*, 2 E.A.D. 594, 600 & n.14 (CJO 1988). Arkansas challenged this determination. 503 U.S. at 97. Upon review, the Court held that the Agency's regulations "constitute[d] a reasonable exercise of the Agency's statutory authority."*Id.* at 105. In coming to that conclusion, the Supreme Court relied upon three statutory principles: (1) the broad discretion vested by Congress to EPA to establish NPDES permits under section 402(a)(2), which provides that EPA, for Agency-issued permits, "shall prescribe conditions * * * to assure compliance with the requirements of [§ 402(a)(1)] and *such other requirements as [it] deems appropriate*,"33 U.S.C. § 1342(a)(2) (emphasis added); (2) the Act's general purpose as articulated in section 101(a), [232] and (3) the fact that section 301(b)(1)(C) "expressly identifies the achievement of state water quality standards as one of the Act's central objectives." *Id.* at 106. Moreover, the Court specifically addressed *International Paper Co. v. Ouellette*, 479 U.S. 481 (1987), the case Petitioner cited during the oral argument in this case in support of its position. The Court explained that *Ouellette* only concerned an affected state's input into the NPDES permit process, which it had found to be limited by section 402(b), the provision governing state permit programs. *Arkansas*, 503 U.S. at 106. The Court differentiated Ouellette from *Arkansas*, stating that "[l]imits on an affected State's direct participation in permitting decisions, however, *do not in any way constrain the EPA's authority* to require a point source to comply with downstream [WQSs]."*Id.* (emphasis added).

***103** Based on the analysis in *Arkansas*, we similarly conclude that the CWA does not limit the Agency's authority to mandate BPS's compliance with Rhode Island's WQSs. We recognize that in *Arkansas*, the question about the Agency's authority and the Agency's regulations arose in the context of discharges whereas here we are dealing with the application of the Agency's regulations to control intakes. We do not believe this difference would change the Supreme Court's analysis of the Agency's authority under those regulations, given that both intakes and discharges can be subject to WQSs.

This brings us to the question whether the Region clearly erred in concluding that the Agency's regulation at 40 C.F.R. § 122.4(d) applied to Rhode Island and to its WQSs. Significantly, 40 C.F.R. § 122.4(d) explicitly refers to "all affected States." The reference to "states" in the plural clearly indicates that it applies to more than just the state in which the discharge occurs. The part 122 regulations do not define "all affected States" or even "affected states." *See*40 C.F.R. § 122.2 (definitions section). The terms are therefore given their ordinary meaning, as used in the context of the regulation. *In re City of Moscow*, 10 E.A.D. 135, 143 (EAB 2001); *In re Odessa Union Warehouse Co-op, Inc.*, 4 E.A.D. 550, 557 (EAB 1993) ("[I]n the absence of a statutory or regulatory definition, it is appropriate to use the common meaning of the terms in question."). [233] The common dictionary definition of "affect" is "to produce an effect upon" or "to produce a material influence upon or alteration in."Webster's Third New International Dictionary of the English Language Unabridged 35 (1993).

The Region found that BPS's intake causes the impingement and entrainment of trillions of organisms from Mount Hope Bay, as well as taking large numbers of fish from the Bay. DPDD at 7-125,-129. In addition, the Region calculated that the withdrawals "result[] in the entire volume of Mount Hope Bay being cycled though the plant about seven times a year. *Id.* at 7-125.The Region did not find that these values and effects were solely limited to the Massachusetts portion of the Bay. [234] Thus, we do not believe the Region clearly erred in interpreting "all affected States" to include Rhode Island. [235]*Cf. In re Waste Tech. Indus.*, 1 E.A.D. 831, 835 (Adm'r 1984) (noting that, in the PSD context, "there is no merit to the contention that all or part of a proposed facility must be located within the boundaries of a State to qualify the state as an 'affected State' for purposes of the" notification regulation where the potential environmental effects of the proposed facility on the other state are "clearly neither remote nor speculative").

***104** In order for section 301(b)(1)(C) to apply, the Region also would have to determine that Rhode Island's WQSs are "applicable." This would involve an analysis of Rhode Island's WQSs, which the Region performed. RTC at V-14. According to the Region, it considered "Rhode Island Water Quality Regulations, Rules 6, 8.A. 8.b, 8.D, and 9.A. "*Id.* In

addition, the Region also considered Rhode Island's interpretation of its own water quality regulations, as formally provided to the Region in the letter Rhode Island submitted during the permit proceedings pursuant to section 401(a)(2). [236] The Region stated that "Rhode Island has classified the western portions of the Rhode Island segment of Mount Hope Bay as Class SA and the eastern segment as Class SB, the two highest classifications under the state's [WQSs]. Rhode Island's SA and SB waters are to provide 'habitat for fish and wildlife.'" DPDD at 7-129. The Region also considered Rule 8.D.1, which stated that all waters should be free of anthropogenic activities that adversely affect the composition of fish and wildlife or interfere with their propagation. [237] *Id.* The Region concluded that Rhode Island's WQSs "are being violated as a result of entrainment and impingement by the current BPS [CWISs] and that the Closed-Cycle Entire Station option is the only alternative currently under consideration that will satisfy these standards in the future." *Id.* As we found above, *see supra* Part VI.B.2.b.i.*a*, the Region can potentially rely on designated uses to regulate cooling water intakes. [238] Further, as we also summarized in the previous section, the Region found significant effects throughout Mount Hope Bay, not just in the Massachusetts segment of the waterbody. Thus, the Region reasonably could have found that the regulation applied to Rhode Island and its WQSs. Petitioner has not convinced us otherwise.[239]

Petitioner and UWAG make several other arguments that we do not find persuasive. Both argue that because impacts only occur at the actual intakes (which are in Massachusetts), WQSs of downstream states, such as Rhode Island, may not be applied. *See* UWAG Br. at 34 n.26. We disagree, especially in light of the facts of this case. As previously noted, the facility intakes trillions of organisms, injures and/or kills large percentages of fish, and cycles through the equivalent of the entire volume of the relevant waterbody (Mount Hope Bay) seven times a year. *See* DPDD at 7-125. In such circumstances, the intake of water does affect at least a substantial amount of the waterbody and the impacts are not only felt right at the location of the intake pipes, filters, and/or other structures. Consequently, it was not unreasonable for the Region to conclude that BPS's intakes affect the water quality in both Massachusetts and Rhode Island, the two states in which the waterbody lies.[240]

***105** Accordingly, we conclude that the Region did not clearly err in relying upon its regulations at 40 C.F.R. §§ 122.4(e), 122.44(d) (1) and (5), which are based on CWA section 301(b)(1)(C) as well as other sections including section 101 and 402(a)(2), to impose CWIS-related conditions in the permit based on Rhode Island's WQSs. Moreover, neither Petitioner nor UWAG have demonstrated that the Region clearly erred in concluding that Rhode Island's WQSs, in the form of its designated uses and as interpreted by Rhode Island in its section 401(b)(2) letter, required the imposition of the CWIS-related limitations in the Final Permit. Thus, we do not find clear error in the Region's conclusion that Rhode Island's WQSs constituted a third, additional, independent basis for the cooling water intake limits in BPS's permit.

3. *Issues Concerning the Underlying Factual Basis for the Permit's Cooling Water Limits*

a. *Participants' Arguments*

In its three briefs, Petitioner argues that the factual findings underlying the Region's section 316(b) determinations - in particular its fish population and impact estimates - are not supported by the administrative record and are, in fact, demonstrably erroneous. DEBP Suppl. Br. at 26-31; DEBP Reply Br. at 13-16; *see also* Petition at 39-43. Petitioner maintains that because of these factual problems, the Region's conclusions were a "vast overstatement of the impact of [BPS's] cooling water withdrawals on fish in Mount Hope Bay."[241] DEBP Suppl. Br. at 26-27; *accord* DEBP Reply Br. at 13-14; *see also* Petition at 46 (containing a series of arguments based on the claim that the Region "erroneously conclude[d] that the permittee's proposed discharge and withdrawal limits would not be adequately protective of Mount Hope Bay").[242]

More specifically, Petitioner contends that the Region used "successively selective" data in calculating the population and impact estimates, such as relying upon only one species of fish (winter flounder), considering only fish in Mount Hope Bay rather than Narragansett Bay, using decades-old entrainment and impingement data, and relying upon only one data set, the Marine Research, Inc. ("MRI") trawl data. DEBP Suppl. Br. at 26-31; *accord* Petition at 39-42; DEBP Reply Br. at 14-16; *see also* Petition, tbl. 1 at 50-71 (various comments challenging the Region's responses regarding these and other factual findings associated with the section 316(b) determinations). Petitioner particularly questions the Region's alleged sole reliance on the MRI data, noting that "reasonable experts," allegedly including Mark Gibson, one of Rhode Island's employees in the Division of Fish and Wildlife ("RIDFW") who has done several studies pertaining to the fish in the Mount Hope Bay area, "all agree that *all* available data should be examined." Petition at 40 (referring to Gibson's 2002 and 2003

reports).[243] Other data that Petitioner argues should have been considered include studies and/or reports by its consultants (i.e., Dr. DeAlteris, Dr. Hilborn, and LMS), the RIDFW, as well as the Gibson 2003 Draft Report and certain BPS impingement data. *See* DEBP Suppl. Br. at 27-28; Petition at 12-14, 39-42. Petitioner asserts that, had the Region used these other d ata, it would have calculated the winter flounder population to be 300,000 to 450,000 instead of 10,000.[244] DEBP Suppl Br. at 28.

***106** Petitioner also raises concerns about the trawl catch efficiencies [245] assumed by the Region in its analysis of winter flounder populations. *Id.* Petitioner claims that it had pointed out to the Region that the Rhode Island Division of Fish and Wildlife ("RIDFW") trawl only had an efficiency of 2%.[246,247] *Id.*

Finally, Petitioner claims that the Region "raised the bar" between the draft and final determinations for determining what level of impacts will support the recovery of fish. Petition at 47. Specifically, Petitioner asserts that, in the Determinati ons Document, the Region "stated that a percentage impact on winter flounder of 26% would 'foster the recovery of specific fish populations,'" *id.* (citing DPDD at 7-126),[248] but that in its Response to Comments, because certain evidence indicated that BPS's current impacts are lower than this, [249] the Region deni ed that it made this statement, *id.* (citing RTC at III-48, IV-51, VII-29), and claimed instead that the necessary level is 5 percent without any explanation or support, *id.* (citing RTC at VII-29).

In response to Petitioner's contentions about the Region's factual findings under section 316(b), the Region generally replies that it addressed similar fact-based arguments in its Response to Comments document and that Petitioner has failed to show error in this analysis. *See* Response at 115-27 (citing various pa ges in the RTC). The Region also argues that, at most, the issues Petitioner raises show "differences of opinion on technical issues." Response at 114; *accord id.* at 117, 121. With respect to Mark Gibson's 2003 Draft Report, the Region asserts that Petitione r has mischaracterized the study author's opinions as well as his overall conclusion. Response at 118-19. The Region further notes that the author himself expressed doubts about some of his calculations because of methodological problems, and that he empha sized that his study "was a work in progress" and should not be used as a basis to modify the Draft Permit. *Id.* at 119 (citing A.R. 3198, Ex. 10 (Letter from Mark R. Gibson, Deputy Chief, Fish & Wildlife, RI DEM, to Ms. Linda Murphy, EPA Region 1 (Sept. 24, 2003))). Concerning the trawl efficiency issue, the Region maintains that the catch efficiencies it used for the reports were "based on information provided by the researchers conducting the surveys." Reg. Suppl. Resp. at 27. With respect to Petitioner's argument about "raising the bar" between Draft and Final Permit issuance, the Region contends that Petitioner has misinterpreted its statements and that it clarified this point in its Response to Comments document. *See* Response at 139-40.

***107** Rhode Island argues that the Region properly relied on the MRI data. *See* RI Suppl. Br. at 8-11. The state maintains that, from a statistical standpoint, the MRI data are the best data for estimating the size of the Mount Hope Bay winter flounder population.[250] *Id.* at 10 (relying on a 2002 analysis by Mr. Gibson). No other participants filed significant substantive arguments on this issue.

b. *Analysis*

Preliminarily, we note that all of the section 316(b)-related factual findings Petitioner challenges involve technical, scientific issues. The majority of Petitioner's arguments, in fact, boil down to scientific disagr eements between it and the Region over the appropriate interpretation, utilization, and application of numerous studies and reports in the administrative record (an d sometimes not in the administrative record). As we have remarked several times previously, *see, e.g., supra* Parts IV and VI.A.2.b.ii.c, we afford substantial deference to the Region's technical determinations and thus will generally focus on whether the Region duly considered the issues raised in the comments and whether the Region's approach was rational in light of the information in the record. *In re D.C. MS4*, 10 E.A.D. 323, 348 (EAB 2002); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 559 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999); *cf. NRDC v. EPA*, 824 F.2d 1258, 1286 (1st Cir. 1987); *Kennecott v. U.S. EPA*, 780 F.2d 445, 448 (4th Cir. 1985); *Nat'l Ass'n of Metal Finishers v. EPA*, 719 F.2d 624, 657 (3d Cir. 1983), *rev'd on other grounds sub nom. Chem. Mfrs. Ass'n v. NRDC*, 470 U.S. 116 (1985); *BASF Wyandotte Corp. v. Costle*, 598 F.2d 637, 652 (1st Cir. 1979). With this standard in mind, we consider Petitioner's arguments.

i. *Challenges to the Region's Fish Population and Station Impact Estimates*

For the most part, Petitioner raised the same issues in its comments on the Draft Permit as it raises here on appeal. [251]*See, e.g.*, BPS Comments on Draft Permit vol. I, at 17-30; *see also id.* attach. 4, at 23-26. The Region responded to these comments in its Response to Comments document. *See generally* RTC at IV-41 to-75, VII-21 to-44.

In particular, the Region explained why it believed the MRI data to be the most appropriate data set. *E.g., id.* at IV-74, VII-22,-30 to-33,-34 to-35,-38 to-41. The Region explained that the MRI data set has been conducted since 1972, has the greatest number of stations, and the highest level of replication of any fish surveys in Mount Hope Bay. RTC at IV-74. Thus, despite Petitioner's claim that the Region "simply asserts - without meaningful explanation - that the MRI standard trawl is 'the best data set,"' Petition at 39, it is clear that the Region did provide an explanation for its use of the data.

***108** The Region also pointed out the problems it believed to be inherent in the other data sets it considered but did not use, such as the DeAlteris,[252] Hilborn, and LMS studies. *E.g., id.* at IV-48 to-50,-73,-74, VII-29, VII-31 to-36 (responses 56a, 56e, 58a-e), VII-39 to-40; *see also id.* at IV-49, VII-38 (explaining deficiencies in Wilcox trawl data). In addition, the Region discussed the Gibson 2003 Draft Report as well as Petitioner's consultants' work based upon that draft report. [253]*See, e.g., id.* at IV-54,-66 to-68,-74. The Region also provided its rationale for using certain impingement data. *Id.* at IV-46 to-47; *see also* DPDD at 7-108. Furthermore, the Region also discussed the significance of considering flounder information and estimates from Mount Hope Bay versus data from Narragansett Bay and the appropriateness of using Narragansett Bay data and/or estimates for its Mount Hope Bay calculations. *E.g., id.* at IV-47 to-50, IV-72, VII-21 to-24,-40,-42. As for Petitioner's assertion that the Region only relied upon one species, this is patently contradicted by the Determinations Document itself. *E.g.*, DPDD at 7-112 to-116 (charts listing entrainment effects on numerous species of fish), -166 to-167 (concluding that there are impacts on a number of fish species including tautog and hogchoker); *see also* RTC at IV-66,-69,-71 (mentioning other fish species). Finally, the Region responded several times to Petitioner's claims that the flounder population calculations were too low and, in doing so, also addressed the question of trawl catch efficiencies. *See* RTC at IV-47 to-49; *see also id.* at IV-66 to-68,-73.

Upon review, we have examined Petitioner's comments on these factual issues, as well as the Region's responses in its Response to Comments document. As evidenced by our brief summary of the Region's detailed response to comments above, we conclude that the Region did duly consider the issues raised by the comments. We further find that the Region's conclusions were adequately explained and are rational in light of the scientific information in the record, including the conflicting opinions among the various experts. Accordingly, we conclude that the Region did not clearly err in making the scientific conclusions which Petitioner challenged in its comments and continues to challenge on appeal.

ii. *The Region's Alleged "Raising of the Bar" for Determining the Level of Impacts that Will Support Recovery*

Turning to Petitioner's argument that the Region "raised the bar" between the Draft and Final Permit for determining what level of impacts will support the recovery of fish, we find that this claim is without merit. Initially, we note that, in its Response to Comments document, the Region did not deny that it had made such a statement in the Determinations Document as asserted by Petitioner. Rather, the Region clarified what it meant by its previous statement, explaining that it had not intended 26 percent to be some sort of cutoff value and had not intended its statements to suggest that losses of 26 percent would be "acceptable," as some commenters had interpreted its statement to indicate.[254] RTC at IV-51, VII-29. The 26 percent figure was merely the percentage loss that would occur under the entire station closed-cycle cooling option, which would be the resulting loss pursuant to the Region's final BTA determination. Thus, the fact that the Region stated in the Response to Comments Document that even losses "of 5 percent of the winter population and large quantities of other species [would be considered] as an adverse impact that warrants minimization, " RTC at VII-29, is not inconsistent with the Region's statement regarding the 26 percent value. Moreover, underlying Petitioner's argument here is its calculation that the resulting losses from its own proposed variance are in the range of 5 to 10 percent, *see* RTC at III-48, VII-29, and thus below the 26 percent value. Petition at 47. The Region, however, specifically disagreed with Petitioner's 5 and 10 percent calculations in its Response to Comments document.[255]*E.g.*, RTC at III-48, VII-29.

***109** Accordingly, we find that Petitioner has failed to explain why the Region's responses to its comments clarifying and explaining the significance of the 26 percent value were erroneous. [256] We also find that Petitioner has not demonstrated that

the Region's conclusions regarding the losses resulting from Petitioner's proposed variance are c learly erroneous. Consequently, we are unpersuaded by Petitioner's arguments on this point.

4. *Issues Concerning the Region's Costs and Economic Benefits Analyses*

a. *Participants' Arguments*

i. *Petitioner and UWAG*

Petitioner and UWAG generally argue that the Region, in its CWA section 316(b) analysis, failed to properly consider both the costs associated with closed-cycle cooling and the benefits to the environment that would be realized should closed -cycle cooling be installed at BPS. Petition at 25 -26, 36-39; DEBP Suppl. Br. at 31 -35; DEBP Reply at 16-18; *see also* UWAG Br. at 8 (claiming that the Region used "invalid methods" in estimating both costs and benefits). In its supplemental brief, Petitioner also challenges the Region's use and application of the "wholly disproportionate" test in weighing the costs against the benefits.[257] DEBP Suppl. Br. at 25 n. 54, 31 -32, 35. UWAG also questions these aspects of the Region's Final Permit determinations. UWAG Br. at 23.

More particularly, Petitioner and UWAG challenge several aspects of the Region's cost analyses. Petition at 26, 48 -51; UWAG Br. at 6 -12. Implicit in this challenge is the assumption that the Region is required by the Act to consider costs.[258] Both participants raise various ob jections to the two approaches the Region used to calculate costs: (1) the Region's "line item approach" (referred to in the Determinations Document as the "Independent Line Item Analysis") and (2) the Region's application to BPS of the Agency's "generic Cost Rule," which was utilized in the 316(b) Phase II rulemaking (referred to in the Determinations Document as the "316(b) Rule -Based Analysis"). Petition at 26, 48 -52; UWAG Br. at 8 -12; *see also* DEBP Suppl. Br. at 41 -42. Petitioner specifically challenges several values used in the Region's Independent Line Item Analysis including the labor costs, the predicted downtime estimates, the retrofit costs, the noise mitigation costs, and a r atio used by the Region's engineering consultant, Science Applications I nternational Corporation ("SAIC"), in estimating capital costs.[259] Petition at 48-52. Petitioner also questions the Region's use of the 316(b) Rule-Based Analysis - which, according to Petitioner, was severely criticized during the Phase II Rulemaking - rather than relying on the site-specific analyses submitted by Petitioner. DEBP Suppl. Br. at 42. UWAG likewise argues that these two methods "seriously underestimated the costs of retrofitting,"*id.* at 8, and raises specific concerns about each method, *see id.* at 9-12.

***110** Petitioner and UWAG also question much of the Region's benefits analyses. Petition at 36-39; DEBP Suppl. Br. at 31-35; DEBP Reply at 16 -18;UWAG Br. at 12 -23. Petitioner generally alleges that the Region's benefits calculations are speculative, arbitrary, and unsupported. Petition at 36; *see also* DEBP Suppl. Br. at 31. Petitioner more speci fically argues that the Region relied upon the recovery of fish populations as one of the major benefits of the Permit's limits, but rather than providing a predictive analysis demonstrating that such a recovery will in fact occur, the Region relied on the principle that "if you build it, they will come. "Petition at 36. Petitioner further argues that although the actual economic benefits calculations for commercial and recreational fishermen resulting from closed -cycle cooling were reduced by two -thirds between Draft and Final Permit issuance, the Region seemingly did not take this into account. Petition at 37; DEBP Suppl. Br. at 34. Petitioner also claims that the Region did not use a "site-specific study to calculate the economic benefits of the Permit to those who do not use Mount Hope Bay for commercial or recreational fishing. "Petition at 26; *see also* DEBP Suppl. Br. at 33. Furthermore, according to Petitioner, the "non-use" values[260] of Mount Hope Bay far outweigh the calculated values for people who do use the Bay, accounting for 99.6% of the final benefits estimated by the Region. Petition at 37; DEBP Suppl. Br. at 34. This result, Petitioner argues, is "facially unreasonable." Petition at 37.

Besides these alleged factually -based problems, Petitioner contends that the various methods used by the Region in both its original and its revised benefits analyses, in particular those used to calculate non -use values, "involved serious methodological flaws rendering them fundamentally invalid. "[261] DEBP Suppl. Br. at 34; *see also* Petition at 37 -38; DEBP Reply Br. at 18; UWAG Br. at 14 -23. P etitioner specifically argues that the methods used by the Region to calculate the "non-use" benefits were inconsistent with "EPA's Guidelines for Conducting Economic Analyses. "[262] Petition at 38. Petitioner also argues that the Region "unjustifiably" continued to refer to the "habitat restoration cost" ("HRC") calculations even though it had acknowledged that permittee's criticism of those ca lculations as "conceptually inappropriate as a measure

of benefits [wa]s 'probably fair.'"[263] Petition at 38 (quoting RTC at IV-30). Petitioner further argues that the Region failed to correct an error in its "foregone production analysis" that it had acknowledged making. *Id.* at 45.

In challenging the Region's benefits methodology, Petitioner also contends that the Agency, in the Final Phase II Rule, acknowledged that certain methods for calculating benefits were not valid. DEBP Suppl. Br. at 34-35, 42. According to Petitioner, under Board precedent, the Region erred by using such methods because it was "not entitled to use methods found invalid by its parent agency." *Id.* at 35 (citing *In re S.D. Warren Co.*, 3 E.A.D. 727 (1991)). In a similar vein, UWAG points out that the Region collaborated with Agency Headquarters in performing much of the benefits analysis for BPS because BPS was one of the case studies used in the Phase II rulemaking. UWAG Br. at 12-13. UWAG contends that while Agency Headquarters later abandoned methods used to estimate non-use values in the Final Phase II Rule, concluding that it was "unable to develop reliable estimates for non-use benefits," the Region used the discarded methodology to support the BPS permit decision. *Id.* at 13-14.

***111** Petitioner also raises two procedural issues with respect to the Region's benefits analyses. First, Petitioner claims that the Region failed to substantively address the comments it and its economics consultant, Dr. Stavins, submitted on the Region's non-use benefits analysis, instead dismissing them in a conclusory manner. Petition at 37; *see also id.* at 38 (pointing out alleged flaws in the Region's responses to comments on the "per-person" and the HRC calculations); *id.*, tbl. 3. Second, Petitioner objects to an argument that it perceives the Region to be raising for the first time on appeal: that the Region's benefits analysis was wholly unnecessary to its decision, and therefore, at worst, any errors were harmless error. DEBP Reply Br. at 16-20.

Petitioner and UWAG also both challenge the Region's comparison of the benefits of closed-cycle cooling to the costs, and in particular, the Region's use of the "wholly disproportionate" standard in comparing the benefits to the costs. *See* DEBP Suppl. Br. at 32; UWAG Br. at 23. Both point out that in the Final Phase II Rule, the Agency determined that "[a] technology must be rejected for use at an existing facility if its costs will be 'significantly greater' than its benefits."DEBP Suppl. Br. at 32; *accord* UWAG Br. at 24. Petitioner contends that the Region should have used this new "significantly greater" standard based upon similar arguments described above in Parts VI.B.1.a and VI.B.1.b.iv.[264] DEBP Suppl. Br. at 32 (referring to *Ziffrin*).

With respect to the appropriate standard that should have been used, both Petitioner and UWAG alternatively argue that even if the wholly disproportionate test were the correct standard in this case, had the Agency correctly calculated the costs and benefits of closed-cycle cooling, the costs of closed-cycle cooling could not have been justified under that standard.[265] DEBP Suppl. Br. at 32, at 35; UWAG Br. at 25 (contending that the Region's conclusion was "not reasonable under any rational comparison of the costs and benefits associated with" BPS). In fact, according to both Petitioner and UWAG, the ratio of costs to benefits here is 144:1, which is "wholly disproportionate" to the costs.[266] DEBP Suppl. Br. at 35; UWAG Br. at 28.

ii. *Region, Rhode Island, CLF, STB*[267]

The Region generally responds to these challenges by maintaining that it did not err in the economic analyses it performed in support of the Permit's section 316(b) limitations. Response at 98; *see also* CLF Suppl. Br. at 16. More particularly, with respect to costs, the Region states that EPA's longstanding approach under section 316(b) has been to consider them in two ways. Response at 98. First, explains the Region, the Agency considers costs in terms of "economic practicability" when determining whether a technology is "available."[268] *Id.; see also* Reg. Suppl. Resp. at 29. The Region asserts that it reasonably concluded that the cost of compliance would be practicable at BPS, and furthermore that no significant comments questioning this conclusion were submitted during the comment period. Reg. Suppl. Resp. at 29, 33-35; *see also* CLF Suppl. Br. at 19-20 (noting that evidence in the administrative record demonstrates that BPS will continue to be profitable should it install closed-cycle cooling). Petitioner has not challenged this determination.[269]

***112** The second part of the Agency's approach to looking at costs under section 316(b), according to the Region, is a "consideration" of costs and benefits.[270] Response at 23-24. The Region notes, however, that while the Agency has always interpreted the statute to "authorize" the permitting agency to "consider" costs "in determining the degree of minimization [of environmental adverse impact] to be required," the Agency has been clear that a cost-benefit analysis is *not* required. *Id.* at 24

(citing *Seabrook I*, 1 E.A.D. 332, 340 (Adm'r 1977)); *accord* CLF Suppl. Br. at 16-17 (arguing that application of the wholly disproportionate test as a secondary consideration under section 316(b) is consistent with the legislative history and casela w). Moreover, according to the Region, when a permitting authority "elects to assess" costs and benefits, it is not constra ined by any particular methodology. Response at 24. Thus, the Region asserts, "[c]ost is not required to be the primary factor in the decision, estimates of costs and benefits need not be precise, and benefits estimates need not be 'monetized.'"[271] *Id.*

The Region states that, in this case, it used the "wholly disproportionate" test, a test "suggest[ed]" by the Administrator in *Seabrook I*, 1 E.A.D. 332 (1977) , but for which there are no specific application guidelines. Petition at 24; *see also* CLF Suppl. Br. at 16 (maintaining that "[s]ection 316(b) has been interpreted not to require a formal cost benefit analysis , but a determination that the costs are not wholly disproportionate to the environmental benefits "). The Region argues that in applying the "wholly disproportionate" test to BPS, it used guidance, previous economic approaches, caselaw, and concepts from the field of natural resources law.[272] *Id.; see also* Reg. Suppl. Resp. at 29-30. The Region also indicates that it did not use a numeric ratio criterion (presumably referring to the 144:1 ratio mentioned by Petitioner and UWAG) because "more than just monetized analyses were factored into the decision." *Id.* at 33.

For its part, CLF maintains that any assertion that the "significantly greater" test should apply to BPS is erroneous. CLF Suppl. Br. at 16. CLF claims that the new test was merely part of the proposed Phase II rule when the permit was issued and further that the test is vulnerable to legal challenge because the standard is contrary to legal precedent. *Id.* at 16-17.

With respect to cost -specific factual issues, the Region contends that it never acknowledged that another cost estimate was needed; instead, the Region claims that it stated that its estimates were reasonable. Response at 104-05. The Region states that it, in fact, prepared "two separate and independent capital cost estimates " and combined these with other cost factors to generate the total present -value costs. *Id.* at 104.The Region also asserts that it considered and respo nded to comments on these calculations, and that its cost analysis was "more than reasonable. " *Id.* Lastly, the Region claims that it explained its rationales for the labor cost calculations, the downtime and plant outage estimates, the estimated retrofit c osts, and the costs of noise mitigation technologies, and that it did not err in its final determinations on these costs. *See generally id.* at 141-53.

***113** Regarding the benefits analyses, the Region argues that its no n-use values were consistent with *EPA's Economic Guidelines*, Petitioner's contentions notwithstanding.[273] Response at 103. The Region furthe r maintains that it did respond to Petitioner's comments in this regard. *Id.* With respect to Petitioner's arguments that the Region did not "calculate" benefits, the Region assumes that Petitioner is suggesting that benefits must be monetized. Response at 105. The Region argues that there is no legal requirement for the benefits to be monetized. *Id.* at 106.The Region further contends that, even though such an analysis was not required, the Region attempted to develop a monetized benefits estimate as well as considering benefits from several other perspectives: qualitatively and quantitatively but non -monetized. *Id.; see also* Reg. Suppl. Resp. at 30; CLF Suppl. Br. at 17 (arguing that the Region appropriately assessed the environmental benefits using a variet y of methods). The Region also notes that it pointed out the flaws in Petitioner's approach. Reg. Suppl. Resp. at 32. Finally, the Region maintains that it did address Petitioner's comments regarding its non -use benefits methodologies. Response at 107 -08; *see also* CLF Suppl. Br. at 17 (supporting the Region's use of HRC and contending that HRC is derived from replacement cost methods that have been used in other natural resource damage claim contexts).

Rhode Island and STB take a different approach. They generally argue that Petitioner's arguments are "superfluous and irrelevant to any consideration authorized under CWA section 316(b) " because EPA is precluded from considering costs under section 316(b) *at all*. R.I. Br. at 27; *see also* RI Suppl Br. at 14-15; STB Br. at 8. Rhode Island, relying upon *Whitman v. American Trucking*, 531 U.S. 457 (2001), argues that the language of section 316(b) does not provide "explicit permission" to EPA for the consideration of costs, and thus the Agency may not consider them. R.I. Br. at 27; *see also* STB Br. at 8. Rhode Island points to an early EPA case, *Seabrook I*, 1 E.A.D. 332 (1977), as additional support for its contention that costs may not be considered. R.I. Br. at 28-29.

Rhode Island further contends that, even if one assumes that costs may be considered in a discretionary manner based on the brief allusion to costs in the CWA's legislative history, the cost and/or cost -benefit analysis need not be nearly as ext ensive as the one Petitioner claims should have been performed. *Id.* at 31-33; RI Suppl Br. at 14 -19; *see also* STB Br. at 8. Rhode Island suggests defining "economic practicability " - the principle articulated in the legislative history - by reference to a

dictionary, which indicates that such a term refers to the overall financial capability to do a thing. RI Suppl Br. at 16. If such a definition is employed here, Rhode Island argues, then the question under section 316(b) is whether Petitioner is able to implement closed -cycle cooling, not whether the costs outweigh the benefits as suggested by Petitioner. *See id.* at 16-17.Rhode Island contends that, as Petitioner has never stated that it is financially incapable of adding the technology (and, in fact, has suggested that it could do it), closed -cycle cooling is appropriate under the section 316(b) standard. *Id.* at 17-18;*see also* CLF Br. at 19 (noting that "there is substantial evidence in the record demonstrating that BPS will continue to be profitable, even after the installation of closed-cycle cooling").

b. *Analysis*

***114** In considering this series of interrelated issues, we first look at the overarching question of the proper scope of the Region's cost and cost-benefit analyses. Next, we focus on the challenges to the Region's two cost analyses. We then turn to the arguments raised with respect to the Region's benefits analyses. Finally, we consider the Region's application of the "wholly disproportionate" test in weighing the costs against the benefits. Again, in our review of these issues, we keep in mind that the issues properly before us are those set forth in the Petition and not those raised only later in subsequent bri efs. *See supra* Part VI.A.3.b.iii. Further, in order to have preserved an issue for appeal, Petitioner must have raised the issues (if reasonably ascertainable) during the comment period and must demonstrate on appeal that the Region's previous response to the comments was clearly erroneous. 40 C.F.R. § 124.19(a); *see also supra* Part IV.

i. *Scope of Cost and Cost-Benefit Analyses*

As a preliminary matter, some participants question the extent to which the Region may consider costs under CWA sec tion 316(b). This issue also implicates the related question about the type of cost -benefit analysis, if any, the Region is required to perform under this section of the Act. As described in more detail above, the participants' positions on these connected issues run the gamut. With respect to the cost issue, Petitioner and UWAG suggest, at least implicitly if not explicitly, that the Region is required to do a detailed, itemized analysis of all the costs. *See supra* note 258 and accompanying text. On the other side of the spectrum, Rhode Island and STB argue that EPA is precluded from any consideration of costs under section 316(b). Finally, the Region and CLF both maintain that, while the Agency has always interpreted the statute to authorize the permitting agency to "consider" costs as a secondary factor, there is no particular methodology that must be used, and a cost-benefit analysis per se is not required.[274] Response at 24; CLF Suppl. Br. at 16.

The participants are similarly split over the type of cost -benefit analysis that should have been performed. Petitioner, although it did not question the Region's use of the "wholly disproportionate" standard in its Petition, *see e.g.*, Petition at 39,[275] argues in its subsequent briefs that the Region should have used the new "significantly greater" standard articulated in the Final Phase II Rule. UWAG takes this position as well. The Region, on the other hand, contends that it properly used the "wholly disproportionate" test. CLF generally agrees with the Region, whereas Rhode Island and STB apparently believe that any cost-benefit analysis would be inappropriate.

Petitioner did raise the same general concerns in several of its comments on the Draft Permit. *See, e.g.*, RTC at IV-13 to-18, cmt. 12. The Region provi ded a thorough response to these comments in its Response to Comments document. [276]*See e.g.*, RTC at IV-13 to-18; *see also* DPDD at 7-1 to-20. The Region explained that "EPA has long been clear that, consistent with the plain language of the statute, [section] 316(b) does not require that a precise or detailed cost -benefit analysis be prepared or considered. In adopting the wholly disproportionat e cost-to-benefits test, EPA only interpreted the statute to authorize 'some consideration' of costs."RTC at IV-14. The Region first pointed to a 1976 preamble to a final rule issued under section 316(b), where the Agency stated that "[n]o comparison of mo netary costs with the social benefits of minimizing adverse environmental impacts, much less a formal, quantified 'cost/benefit' assessment is required by the terms of the Act."[277]*Id.*(citing Section 316(b) Rule, 41 Fed. Reg. 17,387, 17,388 (Apr. 26, 1976)). The Region then cited an early section 316(b) case in which the very same issu es raised here were addressed by the Administrator. [278]*Id.* at 15 (citing *Seabrook I*, 1 E.A.D. 332 (Adm'r 1977)). In that case, the Administrator stated that although "some consideration ought to be given to costs in determining the degree of minimization " of the adverse effects, "a cost/benefit analysis is not required. "*Seabrook I*, 1 E.A.D. at 340.As the Administrator explained, looking at the statute and the legislative history:

***115** Unlike Sections 301 and 304, Section 316(b) determines what the benefits to be achieved are and di rects the Agency to

require use of "best technology available" to achieve them. There is nothing in Section 316(b) indicating that a cost/benefit analysis should be done, whereas with regard to "best practicable control technology currently available" and "best technology economically achievable" Congress added express qualifiers to the law indicating a requirement for cost/benefit analyses.[279] Indeed, but for one bit of legislative history, there would be no indication that Congress intended costs to be considered under Section 316(b) at all.[280]

1 E.A.D. at 340 (citations omitted). The Administrator went on to conclude, however, that he did not "believe that it is reasonable to interpret Section 316(b) as requiring use of t echnology whose cost is *wholly disproportionate* to the environmental benefit to be gained."[281] *Id.* (emphasis added)

In its Response to Comments, the Region also pointed out that the First Circuit had "noted EPA's application of the 'wholly disproportionate test' with approval." RTC at IV-15 (referring to *Seacoast Anti-Pollution League v. Costle*, 597 F.2d 306, 311 (1st Cir. 1979). The Region concluded that "its present conclusion that no strict, formal, or precise cost-benefit analysis is required to support the development of CWA [section] 316(b) permit limits for the BPS NPDES permit is legally sound and consistent with Agency precedent. Nothing in the CWA, its legislative history, EPA regulations, or case law suggests otherwise." *Id.*

The Region further explained that "[f]or *general* guidance in applying the wholly disproportionate cost test, [it] looked, by analogy, to the Agency's application of the identically phrased test [i.e., a "wholly disproportionate cost" test] in the development of BPT effluent discharge limitations" under CWA section 301(b)(1)(B), 33 U.S.C. § 1314(b)(1)(B). RTC at IV-16. According to the Region, under both the legislative history and case law of the BPT provision, "cost-benefit balancing is to be of a 'limited' nature and cost is not to be considered a factor of 'primary' or 'paramount' importance."[282] *Id.* The Region further pointed out that if this is the case for developing BPT standards, standards for which a degree of cost-benefit balancing is *explicitly* required by the CWA, then correspondingly, "in applying the 'wholly disproportionate cost' test under [section] 316(b), which does not even mention cost considerations," costs should not be of primary importance. *Id.*

Upon review, we find that the Region's approach in considering costs and in performing the limited "wholly disproportionate" cost-benefit analysis in the development of BPS's permit was consistent with the Agency's cost/cost-benefit approach dating almost thirty years. *E.g.*, Proposed Phase II Rule, 67 Fed. Reg. 17,122, 17,124 (Apr. 9, 2002) (stating that the Agency has used the "wholly disproportionate" cost-benefit test since the 1970s). Moreover, neither Petitioner nor UWAG have demonstrated that the Region's responses on this issue were clearly erroneous, nor have they provided any information on appeal that suggests otherwise.

***116** Petitioner's arguments that the new "significantly greater" test[283] set forth in the recently-issued Phase II Rule should be applied "[u]nder the rule of *Ziffrin*" is unavailing. This argument relies on Petitioner's earlier contention that, "in the context of permitting proceedings, an agency must apply the law as it exists at the time of final agency action."[284] *See* DEBP's Suppl. Br. at 24, 32 (relying on *Ziffrin, Inc. v. United States*, 318 U.S. 73, 78 (1942)).

As we explained above, it is not clear whether, in light of recent caselaw involving the retroactive application of statutes and regulations, the reasoning in *Ziffrin* would still apply today. *See supra* Part VI.B.1.b.iv. Moreover, as we also pointed out above, to the extent that *Ziffrin* would provide guidance in the absence of a specific statement as to whether a rule was intended to apply retroactively, the final Phase II Rule clearly indicates that the rule is to be applied prospectively. *See, e.g.*, Phase II Rule, 69 Fed. Reg. at 41,593; *see also* Proposed Phase II Rule, 67 Fed. Reg. at 17,124. Finally, as we also discussed above, the time that has generally been selected for "fixing" in place the regulatory framework that should be applied to a particular permit is *when the region initially issues a final permit*. *See supra* Part VI.B.1.b.iv. To the extent that we may have *discretion* to remand permit conditions for reconsideration in light of legal requirements that change before the permit becomes final agency action, we decline to do so. We decline to remand the permit to the Region for reconsideration in light of the application of the new cost-benefit standard that is contained within the Phase II Rule for the same reasons we declined to remand the permit to the Region for reconsideration in light of any potentially new application of BTA contained within the Phase II Rule.[285] *See supra* Part VI.B.1.b.iv. We will not reiterate those same reasons here.

With respect to Rhode Island's and STB's argument that costs may not be considered at all, we find this particular contention to be beyond the scope of the Petition and thus untimely raised.[286] We therefore do not consider it further.

Accordingly, because the Regio n applied the Agency's longstanding interpretation of section 316(b) with respect to the consideration of costs, we do not find the scope of the Region's cost or cost -benefit analysis to be clearly erroneous. Furthermore, Petitioner and UWAG have failed to demonstrate clear error on the part of the Region and, in particular, in the Region's responses to the comments on these issues. Thus, Petitioner has failed to convince us that remand is warranted on this issue.

ii. *Cost Issues*

a. *Region's General Approach*

***117** In developing the Draft Permit, the Region[287] used two methods to calculate capital cost estimates for retrofitting BPS: a 316(b) Rule-Based Analysis and an Independent Line Item Analysis. RTC at IV -81; *see also* DPDD at 7-79 to-82. Although the 316(b) Rule-Based Analysis resulted in slightly higher c apital costs, both estimates yielded relatively similar results, thus providing some measure of confidence to the Region regarding their reasonableness. RTC at IV -81; DPDD at 7 -81 to-82 & tbl. 7.4-1. The Region, in order to take a conservative approach, ca rried forward the higher estimates (i.e., the estimates from the 316(b) Rule -Based Analysis) into the overall cost assessment and thereby into the development of the Draft Permit conditions. DPDD at 7-81 to-82. Notably, the Petitioner's cost estimates were significantly higher than either of the Region's. *See id.* at 7-78 & tbl. 7.4-1.

The Region received a variety of comments on its cost estimates and its overall financial analysis of the cost to convert BPS to closed-cycle cooling. *See, e.g.*, RTC at IV -75 (summarizing several comments); *id.* at IV-82. Based on these comments, the Region revised some of its cost values. *Id.* at IV-80,-82. The changes generally led to higher capital cost estimates under both methods; however, both estimates were still two or three times lower than Petitioner's. *Id.* at IV-83. After revising the two sets of cost estimates, the Region found that the Independent Line Item Analysis yielded the higher costs. *Id.* at IV-87. Thus, in order to be consistent with the conservative approac h it used for the Draft Permit, the Region selected the higher of the two estimates - i.e., those generated by the Independent Line Item Analysis - to carry forward into the remainder of its financial analysis for the Final Permit. *Id.*

b. *Challenges to the Region's Independent Line Item Analysis*

Both Petitioner and UWAG challenge the Independent Line Item Analysis used by the Region's engineering consultant SAIC to calculate costs. Petition at 49; UWAG Br. at 11 -12; *see* DPDD at 7-79. Because a description of the methodology is useful in understanding the issues, we include a summary of it here. SAIC, in its implementation of the Independent Line Item Analysis, compared Petitioner's detailed capital cost estimates for each "line item" to similar cost ite ms in an independent data source, the RS Means Cost Works database, which contains construction cost estimates for general construction throughout the United States. DPDD at 7 -79. The Cost Works estimates also include labor costs. *See id.* Where the database contained matches to Petitioner's cost items, which occurred between 16 and 23% of the time depending on the technological option, SAIC used the value in its analysis. [288] *Id.* SAIC then compared Petitioner's line item costs to those from the independent database and determined that overall Petitioner's cost estimates were significantly greater. [289] *Id.* SAIC concluded that "[t]he ratio of the total of independently estimated line item costs to the total of [Petitioner's] corresponding line item costs indicates the relative extent to which the independent estimates are less than [Petitioner's] estimates for each technology option." *Id.* SAIC assumed the comparative relationship observed for the matched items was representative of all cost items and therefore multiplied this ratio by the cor responding total of Petitioner's costs for a technology option to yield its independent estimate of the capital costs. *Id.*

***118** UWAG and Petitioner both contend that there were several problems with using this ratio. P etitioner first claims that, although SAIC's estimated labor costs were adjusted from those used to develop the Draft Permit, they still "remain significantly below the actual costs determined by [Petitioner's consultants] Stone & Webster to be available i n the BPS market area." Petition at 49. Petitioner alleges that the Region failed to "reconcile its estimates with those from Stone &

Webster or to justify its use of any other data sources " used for labor productivity. *Id.* Second, Petitioner asserts that S AIC used the ratio it had generated based on these "underestimated" labor costs to reduce the engineered equipment capital costs (including the cooling towers), costs for which SAIC and the permittee had allegedly developed "actual and similar cost estimates." *Id.* (citing A.R. 3263, Ex. 33, vol. II, tab 12, at tbl. 1 (Comments of Stone & Webster on Draft NPDES Permit No. MA0003654, BPS, Somerset, Massachusetts) [hereinafter Stone & Webster Comments]); *see also* UWAG Br. at 11 (noting a particular concern about the Region's use of the ratio in the case of some of the largest capital expenses, such as the cooling towers). By using the ratio to reduce these costs, claims Petitioner, "a significant part of the total capital co[s]ts were arbitrarily reduced by the same 41% factor."Petition at 49; UWAG Br. at 11 -12 (challenging the use of the ratio to reduce costs for "critical aspects" of the retrofit already estimated by Petitioner and which UWAG believes were reasonable).

(1)Labor Costs

Examining the record, we note that in its comments on the Draft Permit, Petitioner raised concerns that the labor costs used by the Region were significantly below actual market costs and were different from Petitioner's consultant's values. *See, e.g.*, RTC vol. II, app. O, at 6 -7. The Region responded to these concerns. *See id.* app. O, at 6 -9; *see also id.*, apps. Q, S. In fact, the labor costs were adjusted in the final analysis based on Petitioner's comments. RTC at VIII -20; *id.* vol. II, app. O, at 6, app. S, at 2. The Region explained why it believed its use of the database labor rates was justified, stating that the databa se it used is the standard in the industry. RTC vol. II, app. O, at 7. The Region also listed the various entities that have been involved in the database's development and that currently use it. [290] *Id.* Additionally, in the Determinations Document, the Region explained th at SAIC used adjusted costs in its analysis, which "t[ook] into consideration regional costs for material and labor."DPDD at 7-79. In particular, SAIC selected data "that represented the highest union rates for Boston, which is the most costly region in Ma ssachusetts."*Id.* The Region also indicated that Petitioner's estimates were inflated, noting that, at a site visit to BPS, it learned that the average labor rate currently being paid at the plant was lower than that used by Petit ioner (and its consultants) in their estimates. *See* RTC at VIII-20; *id.* vol. II, app. U, at 5. The Region acknowledged, however, that the database values had not included indirect labor costs. RTC vol. II, app. O, at 6-9. The Region, therefore, added these costs to the final estimat es. *Id.* Thus, contrary to Petitioner's assertions, the Region did explain why it did not use Petitioner's values and did "justify its use " of these other data sources in its response to comments. On appeal, Petitioner has not demonstrated that the Region's responses on these points were clearly erroneous.

(2)Reduction of Capital Costs

***119** We find several procedural problems with Petitioner's challenges to the Region's use of the ratio to reduce the capital cost estimates. First, upon review of the particular comment to which Petitioner cites in support of its position that the Region improperly applied the ratio to capital costs - including the cooling towers - because the Region had already estimated such costs, it is apparent that Petitioner is actually referring to the fact that the Region, when using the other method (i.e., the 316(b) Rule-Based Analysis), estimated cooling water tower costs. *See* Stone & Webster Comments at 17, tbl. 1. The table Petitioner cites m erely compares Stone & Webster's estimates with SAIC's estimates using the "316(b) Rule Costing Methodology" for various cost items. *Id.* Thus, Petitioner's argument concerning problems with the Independent Line Item Analysis attempts to mix in values from the Region's 316(b) Rule-Based Analysis. Petitioner has not included an explanation as to why this would be appropriate. We also note that Petitioner does not cite any place in its comments on the Draft Permit where it raised this particular issue, besides citing this table, which (as we have already observed) merely lists cost comparisons between Petitioner's estimates and the Region's estimates using the 316(b) Rule -Based Analysis. [291] This table, in and of itself, is insufficient to present the concern Petitioner now raises on appeal. Thus, not only is this particular argument of Petitioner's unpersuasive, but also Petitioner did not raise th is issue in its comments on the Draft Permit with sufficient specificity to preserve it for review. Thus, it is procedurally barred. *E.g., In re Westborough*, 10 E.A.D. 297, 304 (EAB 2002) ("[I]n order for an issue to be reviewed on appeal it must have been raised with a reasonable degree of specificity and clarity during the comment period."); *accord In re New England Plating Co.*, 9 E.A.D. 726, 730 (EAB 2001); *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 230 (EAB 2000).

Furthermore, insofar as Petitioner (and UWAG) more generally challenge the Region' s approach in using the ratio to reduce capital costs, the record indicates that commenters on the Draft Permit raised similar points concerning SAIC's line item methodology generally as well as SAIC's use of a ratio derived heavily from differences in lab or costs to extrapolate the

capital costs for the retrofit. *See, e.g.* , RTC vol. II, app. O, at 7. The Response to Comments document addressed these concerns and, in fact, included a statistical analysis that evaluated the reasonableness of making this type of inference. *See id.* at 6-12 (generally responding to comments challenging the Region's Independent Line Item Analysis, including concerns about applying the ratio to capital costs); *id.* app. Q (containing a statistical analysis of the method). Neither Petitioner nor UWAG provide any information demonstrating, or even suggesting, flaws in the Region's responses to these comments. *E.g., In re Peabody W. Coal Co.*, CAA Appeal No. 04-01, slip op. at 16 (EAB, Feb. 18, 2005), 11 E.A.D. ___ (explaining that "the petitioner may not simply reiterate comments made during the public comment period, but must substantively confront the permit issuer's subsequent explanations"); *In re Carlota Copper Co.* , NPDES Appeal No. 00-23, slip op. at 22 (EAB, Sept. 30, 2004) (same), 11 E.A.D. ___; *In re Teck Cominco Alaska Inc., Red Dog Mine* , NPDES Appeal No. 03-09, slip op. at 22 (EAB, June 15, 2004) (same), 11 E.A.D. ___; *In re Steel Dynamics, Inc.*, 9 E.A.D. 740, 744 (EAB 2001) (same).

***(3)** Summary*

***120** In sum, the Region's analysis and approach on this set of issues appear rational to us in light of all the information in the record. Petitioner and UWAG, although continuing to dispute the fact that the Region did not utilize Petitioner's costs in their entirety, have failed to demonstrate clear error on the part of the Region and, in particular, in the Region's responses to comments on these same issues. Moreover, in their briefs, neither participant provides specific challenges to the revised calculations the Region used or to the statistical analysis that was done to respond to similar comments regarding the general methodology. Consequently, Petitioner has failed to convince us that remand is warranted on this issue.

***c**. Challenges to the 316(b) Rule-Based Analysis*

Petitioner and UWAG also both challenge aspects of the Region's use of the 316(b) Rule-Based Analysis. Significantly, however, several of their arguments are procedurally flawed. Although Petitioner generally alleges in its Petition that the Region's estimated cost to retrofit BPS using the 316(b) Rule-Based Analysis was "not based on substantial evidence" and was "erroneously low," the only specific problem Petitioner mentions is a 25% upward adjustment factor that was added by SAIC to the estimated costs. [292] Petition at 50. Petitioner argues that its consultant provided comments on the Draft Permit detailing reasons that this factor was too low, but the Region did not adequately respond to these comments. *Id.* (referring to Stone & Webster Comments at 18-19). Because Petitioner does not provide any support for its broad, conclusory allegation of error, below we only consider Petitioner's more particularized claim about the 25% adjustment factor.[293]

In its supplemental brief, Petitioner also questions the Region's reliance on the 316(b) Rule-Based Analysis in light of the severe criticisms the Agency received on this methodology during the Phase II Rulemaking. DEBP Suppl. Br. at 42. In particular, Petitioner claims that this approach was criticized for its failure to take into account site-specific information. *Id.* Petitioner asserts that it submitted at least one of these criticisms, a Department of Energy ("DOE") study, to the Region during the permitting process. *Id.* (citing A.R. 3217 (U.S. DOE, *An Investigation of Site Specific Factors for Retrofitting Recirculating Cooling Towers at Existing Power Plants* (Oct. 2002) and A.R. 3218 (*Addendum to DOE Report* (Jan. 2003))). UWAG likewise challenges the Region's use of the 316(b) Rule-Based Analysis, stating that it submitted comments opposing this methodology during the Phase II rulemaking.[294]

UWAG Br. at 9. UWAG contends that the Region's use of the 316(b) Rule-Based Analysis instead of the cost estimates Petitioner had provided to estimate the costs to retrofit BPS failed to take into account site-specific factors (several of which UWAG specifically describes) and thus underestimated the cost of retrofitting.[295] *Id.* at 9-10.

***(1)** 25% Piping Factor*

***121** Petitioner's challenge to the 25% "piping factor" involves technical issues. The Response to Comments document explains the Region's rationale for imposing the 25% increase. *See* RTC vol. II, app. O, at 14, app. P, at 6-9. While perhaps not responding to every detail raised by Stone & Webster's comments on this issue, the Region's response does generally discuss the issue. As we mentioned previously, *see supra* Part VI.A.3.b.ii.*b*, the regulation governing response to comments in a permit proceeding requires the Region to "[b]riefly describe and respond to all significant comments," 40 C.F.R. § 124.17(a)(2), but does not require the Region "to respond to each comment in an individualized manner" or require that "the

Region's response be of the same length or level of detail as the comment, "*In NE Hub Partners, L.P.*, 7 E.A.D. 561, 583 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999)." The fact that the Region adopted none of Petitioner['s] comments on the[] permit[] is not in itself indicative of error, especially when the comments were primarily technical in nature and raised issues subject to genuine disagreement by experts." *Id.* at 583. As we already stated, the Region explained its rationale behind using a 25% piping factor. In fact, after receiving comments, the Region appears to have added an additional $6 million to its original cost estimates to include certain piping modifications. *See* RTC vol. II, app. O, at 5. We thus find that the Region satisfied its obligation to duly consider the issues raised in the comments. The Region's analysis and approach on this issue appear rational to us in light of all the information in the record.

***(2)** Criticisms of 316(b) Rule-Based Analysis*

Commenters, including Petitioner, raised general concerns regarding the Region's use of the 316(b) Rule-Based Analysis for BPS's NPDES permit as well as concerns about site-specific costs. *See* RTC vol. II, app. O, at 1-6. The Region addressed these concerns, including those regarding site-specific costs. *E.g., id.* at 3-5. For example, the Region stated that it "agree[d] with comments that the [316(b) Rule-Based Analysis] approach is necessarily a less site-specific analysis than the line-by-line approach." *Id.* at 1-2. The Response to Comments document noted, however, that the 316(b) Rule-Based Analysis method generally yields *higher* costs than site-specific methods, which is why, for the Draft Permit, "the Region used the higher estimate produced by the [316(b) Rule-Based Analysis] just to be conservative. This works to the permittee's benefit." *Id.* The Region further explained that this generic analysis was done in addition to a more site-specific analysis (i.e., the line item approach) "to provide additional perspective on the reasonableness of the approaches." *Id.* at 4. The Region also noted that it had recalculated and raised the cost estimate generated under the 316(b) Rule-Based Analysis based on information that certain costs had been initially omitted (e.g., a regional cost factor, an additional $6 million for certain piping modifications). *Id.* at 5. Significantly, the Response to Comments document also noted that the 316(b) Rule-Based Analysis was no longer being used as the basis for the permit conditions. *See, e.g.*, RTC at IV-82 (stating that the "capital cost estimates for the Final Permit are based on the site-specific, line-by-line method, rather than the [316(b) Rule-Based Analysis], although it believes the [316(b) Rule-Based Analysis] method remains valid, especially with the adjustments it has made for its site-specific application to BPS in response to comments"); *see also id.* at IV-81 to-82; RTC vol. II, app. O, at 1-2.

***122** The Region also addressed the implications of the DOE reports in its responses to comments on the Draft Permit. *See* RTC IV-81 to-82; *see also* Ex. 81, A.R. 3190 (Memorandum from Damien Houlihan, Permit Engineer, EPA, to BPS Permit File) [hereinafter "Houlihan Memo"]. The initial DOE study had been commissioned by the DOE during the Phase II Rulemaking process and consisted of an analysis of the cost of retrofitting four existing plants (none of which was BPS) from once-through to closed-cycle cooling. Houlihan Memo at 1. DOE later prepared an addendum to the report based upon discussions it had with the four utilities that had been the focus of the original report. *Id.* In discussing the DOE report in response to comments about it, the Region stated that it did not believe that the DOE analysis "warrant[ed] any changes to its [initial] analysis," especially in light of the fact that the Final Permit was based on the Independent Line Item Analysis. RTC at IV-81 to-82. In addition, the Region cited to a supporting memorandum that had been prepared by Regional personnel analyzing the DOE report, the addendum to the report, and Petitioner's new comments based upon these documents. *Id.* at IV-82. The six-page memorandum summarized the DOE study, mentioned that BPS was not one of the facilities assessed in the report, and included a discussion of several problems found with Petitioner's assumptions and conclusions in connection with the report. Houlihan Memo at 1-3. The memorandum also explained in detail why the Region believes the DOE report, the addendum, and Petitioner's subsequent analysis do not "undermine" the Region's conclusions. *Id.* at 3-4. Finally, the Region explained that the changes EPA Headquarters was considering making to "national estimates for retrofit-related unit outages at nuclear power plants," apparently based upon DOE's comments, did not constitute a sufficient basis for changing estimates at BPS, which is not a nuclear power plant. RTC at IV-82.

Upon review, we find that the Region provided an adequate rationale explaining why it believed the 316(b) Rule-Based Analysis to be reasonable despite its lack of many site-specific costs. *See* RTC vol. II, app. O, at 1-5. Neither Petitioner nor UWAG has demonstrated clear error on the part of the Region and, in particular, in the Region's responses to the comments on these issues. Moreover, in light of the fact that the Region apparently did not rely upon this method to develop the 316(b) limits in the Final Permit, although presumably it did use the calculations from this method to help confirm the calculations

derived via the Independent Li ne Item Analysis, this particular issue appears to be largely moot at this point. Significantly, neither UWAG nor Petitioner dispute the Region's statements in its Response to Comments document that it did not predicate the Final Permit section 316(b) limi tations on this method. Consequently, we find no reason to remand the permit based on this issue.

***d.** Other Alleged Errors in Cost Values*

123** As summarized above in Part VI.B.4.a.i, Petitioner claims that several of the values the Region used in its cost analyses are erroneous. Two of these have not yet been addressed in previous sections - the Region's predicted downtime estimates and the Region's noise mitigation costs - and thus we address them here. [296] Petition at 48-52. Insofar as any of these raise technical issues, we have already explained that, when the Board is presented with conflicting expert opinions over technical issues, "we look to determine whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record."*In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002). The Region's rationale for its conclusions, however, must be adequately explained and supported in the record. *In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), ***review denied sub nom. *Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999).

***(1)** System Outages/Downtimes*

First, Petitioner challenges as erroneous the Region's calculation of system outages during the time that BPS would undergo conversion of its cooling system, arguing that the Region adopted downtime estimates that were lower than Petitioner's estimates "based on an arbitrary and unrealistic change in design." [297] Petition at 50. Petitioner further contends that the Region did not justify this change in the facility's design, a design that Petitioner's consultants "have determined is infeasible." *Id.* (citing Stone & Webster Comments at 13; "Stone & Webster Response to Page 13 at App. O"). [298] Petitioner's arguments on this point relate to technical judgments regarding the length and cost of system shutdowns due to the conversion of the cooling system as well as the method in which the system would be converted.

Upon review of the Region's explanation for its selection of the design (and the construction downtime estimates associated with it) in the Determinations Document, the comments received concerning this design, and the Region's responses to those comments, we find that the Region demonstrated that it considered the relevant comments and ultimately adopted a rational approach on this issue. In its Determinations Document, the Region discussed the rationale behind its decision to reduce the construction downtimes from Petitioner's estimate of twenty-seven unit-months to fifteen unit-months. *See* DPDD at 7-85 to-87 & vol. II, app. B, at 25-30. The Region, relying on SAIC's analysis, found that Petitioner's claimed outage times appeared to rely on its "decision to install an entirely new set of pumping stations for the recirculation pumps for Units 1, 2, and 3 in a manner that interferes with the current once-through operation."*Id.* at 7-85 (quoting SAIC Report at 25). SAIC found some of Petitioner's concerns to be valid, in particular, its "concerns about piping and condenser pressure."*Id.* However, upon consideration of several case studies of other power plant that had converted to closed-cycle cooling, SAIC concluded that Petitioner could significantly limit the downtime associated with pumping issues by utilizing procedures that had been used by the other plants. *Id.* at 7-86.Relying on the most conservative approach taken by the other plants, SAIC recalculated the downtimes. *Id.*

***124** In its Response to Comments document, the Region addressed concerns regarding the feasibility of the alternative design it had discussed in the Determinations Document. *See, e.g.*, RTC vol. II, app. O, at 12-14; *see also id.* at IV-32,-39,-82. The majority of the Region's response was by its consultant SAIC, responses with which the Region agreed and incorporated by reference. *Id.* at IV-32. In responding to comments, SAIC explained that it had used Petitioner's own "enhanced multi-mode" design, which retains the existing once-through cooling water system, but adds certain connections and valves which apparently allow for faster switching from open-to closed-cycle cooling. [299]*Id.* vol. II, app. O, at 13-14. SAIC further explained that "the EPA design uses the basic [Stone& Webster] design, but differs in that the new recirculating pump houses are placed in a different location."*Id.* at 14.SAIC also discussed the location of the new pumps [300] and the likely cost. *Id.*

As a procedural matter, SAIC pointed out that Petitioner's comments on the Draft Permit were "conclusory assertions" generally attacking the Region's alternative design and did not "detail the inadequacies of [the consultants's] design, * * * document the rationale and basis for its own design considerations * * *, and provid e[] scant information on site -specific factors or features which would allow EPA to independently evaluate the merits of its claims. "[301] *Id.* at 13.SAIC also asserted that Petitioner did not "provide any specific information to invalidate" SAIC's 2002 estimate, "which is based on placing the new recirculating pumps in a location different from that proposed by [Stone & Webster]. "*Id.* at 14.Moreover, SAIC noted that certain portions of the Petitioner's description of the construction plans in its comments on the Draft Permit appear to have changed from those originally submitted by Petitioner and its consultant. *See id.* at 13.SAIC read Petitioner's comments as implying that it has accepted certain of SAIC's alternative as viable. *Id.*

Although perhaps not lengthy, the Region did respond to comments about its alternative design as well as the downtimes associated with that design. *See, e.g., id.* at 12-14;*see also* RTC at IV-32,-39,-82; Houlihan Memo at 4-6.[302] Thus, contrary to Petitioner's assertions, we find that the Region did justify its design. As we have stated previously, *see supra* Part VI.A.3.b.ii.*b*, the regulation governing response to comments in a permit proceeding only requires that the Region "[b]riefly describe and respond to all significant comments * * *. "40 C.F.R. § 124.17(a)(2) ; *accord In NE Hub Partners, L.P.* , 7 E.A.D. 561, 583 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA* , 185 F.3d 862 (3d Cir. 1999) . The regulation does not require the Region "to respond to each comment in an individualized manner," nor does it require that "the Region's response be of the same length or level of detail as the comment. "*NE Hub*, 7 E.A.D. at 583; *see also In re Hoechst Celanese Corp.* , 2 E.A.D. 735, 739 n.7 (Adm'r 1989) . We find here that the Region did sufficiently describe and respond to the comments and that there is ample supporting material in the record for th e Region's conclusions. Furthermore, as we have also explained, *see supra* Part VI.A.3.b.ii.*b*, where "an issue is raised only generically during the public comment period, the permit issuer is not required to provide more than a generic justificat ion for its decision, and the petitioners cannot raise more specific concerns for the first time on appeal."*In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 251 n.12 (EAB 1999); *accord In re Knauf Fiber Glass, GMBH* , 8 E.A.D. 121, 147 (EAB 1999) (stating that issues raised in a general manner only warrant general justifications from the permit issuer); *see also In re Steel Dynamics, Inc.* , 9 E.A.D. 165, 230 -31 (EAB 2000) . Comments raised with respect to the alternative design apparently fall within this category. Thus, we find that the Region's response to these comments was sufficiently respo nsive in comparison to the depth of the comments, and Petitioner may not attempt to raise more specific concerns on appeal. Finally, based upon our review of the administrative record, including the Determinations Document and supporting documents as well as the Response to Comments document, we find that the Region "duly considered the issues raised in the comments" about this technical issue and provided a reasonable rationale for its approach in selecting the alternative design and the associated constru ction downtimes. *E.g., In re D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002) . Accordingly, we conclude that Petitioner has failed to convince us that remand is warranted on this issue.

(2)*Noise Mitigation Costs*

***125** Petitioner's final cost challenge centers on the Region' s analysis of the noise mitigation costs. Petitioner maintains that, even though the Region concluded that the noise mitigation costs could increase costs up to 8%, the Region failed to account for them based on the erroneous conclusion that even if these costs were included, this additional amount would not alter the Region's conclusion under the wholly disproportionate test. [303] Petition at 5 1. Upon review of the record, we find that, although it is true that the Region did not include the noise mitigation costs, Petitioner has mischaracterized the Region's discussion of this issue. We also find that this issue, at least in significant part, r aises technical questions about whether additional noise mitigation measures will be necessary, questions whose answers depend upon how the cooling water tower infrastructure will be built.[304]

In the Response to Comments document, the Region provided a lengthy analysis of the issue of noise that would likely result from the operation of the BPS cooling towers as well as the cost of possible additional noise mitigation measures, *if* they are required.[305] *E.g.*, RTC at IV-83 to-86; *see also id.* vol. II, app. L (consultant's noise impact assessment). The Region explained that its consultant had determined that, if needed, noise mitigation equipment exists that could be used at BPS. *Id.* at IV-84. The Region's consultant also provided a range of possible costs for this equipment. *Id.* The Region pointed out, however, that "[i]t is impossible at this juncture to be [sic] predict what, *if any*, additional noise mitigation will be needed as a result of the MA DEP's noise review and approval process."*Id.* (emphasis added). Consequently, the Region stated, in several places in its

Response to Comments document, that "the Agency could not determine what would be a reasonable amount to add [to the cost estimates] given the present uncertainty over what, *if any*, additional mitigation might be needed. "RTC at IV-36 n.23; *accord id.* at IV-43 n.24,-84. Thus, the Region did not include this cost in its overall cost estimates. Furthermore, the Region stated that "it appears that any capital cost increases would likely range from 3 percent to 15 percent. Thi s is well within the approximate 25 percent range of error in the present capital cost estimates."*Id.* at IV-36 n.23.

Consequently, upon review, we find that the record demonstrates that the Region did "duly consider" the noise mitigation cost issue as well as the comments submitted concerning this issue. Moreover, the approach the Region adopted appears to us to be rational in light of the information in the administrative record. We do not find it unreasonable that the Region considered the range of the possible noise mitigation costs but ultimately did not add them to the final overall costs where there was insufficient information to indicate whether such noise mitigation costs would in fact be incurred and, if they wer e, what these costs would be, and where the Region had already built in a 25% contingency for additional costs. Thus, Petitioner has failed to convince us that remand is warranted on this issue.

iii. *Benefits Issues*

a. *Region's General Approach*

***126** As we summarized above, *see supra* Part VI.B.1.b.ii, in its Determinations Document accompanying the Draft Permit, the Region provided a lengthy analysis of the appropriate CWIS requirements that should be imposed on BPS under CWA section 316(b).*See generally* DPDD ch. 7. This analysis included a discus sion of BPS's biological impacts on Mount Hope Bay under five different operating scenarios, including the current one, *see id.* at 7-102 to-116, as well as the ecological significance of those impacts, *id.* at 7-116 to-125. *See also supra* Part VI.B.1.b.ii. Following its analysis of the ecological impacts of the various operating scenarios, the Region considered "the benefits to society from the reduced adverse environmental effects that would accompany cooling system improvements at BPS. "*Id.* at 7-126.The Region did this both qualitatively and quantitatively. *Id.* at 7-126 to-160. The Region first summarized the "biological gains" from the various technology options in terms of numbers and/or pounds of fish, concluding that "the Closed Cycle Entire Station option is the only option under consideration that will offer sufficient reductions in entrainment and impingement mortality * * * to allow the likely recovery of the severely depleted populations of winter flounder and other species * * *. The other options under consideration * * * will not reduce intake capacity sufficiently to allow the likely recovery of the collapsed fish species populations in Mount Hope Bay. "*Id.* at 7-128;*see also* RTC at IV-21 to-22 (discussing its "Quantitative, Nonmonetized Benefits" analysis). The Region further concluded that the "Closed-Cycle Entire Station option is also the only option under which entrainment and impingement of organisms by the plant's cooling water intake structure would not interfere with the satisfaction of Massachusetts and Rhode Island [WQSs]. "[306] DPDD at 7-128. The Region then performed a "Qualitative, Public Policy-Level Assessment," in which it emphasized the importance of the Mount Hope Bay estuary ecosystem and the importance of restoring it as a healthy ecosystem for fish, as demonstrated by the fact that federal agencies, Massachusetts, Rhode Island, and even certain cities had all undertaken various steps to alleviate the fisheries problems in the Bay. DPDD at 7-130 to-134; *see also* RTC at IV-22 to-23 (discussing its "Nonmonetized Qualitative Consideration of Benefits").

The Region also attempted to "roughly estimate" the monetar y value of the biological and/or ecological benefits using several methods. DPDD at 7-134 to-160; *see also* RTC at IV-23 to-31 (discussing its "Monetized Benefits Assessments"). These methods included (1) a "Benefits Transfer" analysis;[307] (2) a "Per-Person Recreational and Non-Use Value" ("PPNV") analysis;[308] and (3) an HRC analysis (i.e., the aforementioned "Habitat Restoration Cost" analysis).[309] DPDD at 7-134 to-160. While the "Benefits Transfer" analysis focused on commercial and recreation use values, the PPNV and HRC analyses looked at non-use values. *See id.* at 7-145 to-157. The Region explained the weaknesses and limitations of each of its approaches. *E.g., id*. at 7-142 to-145. These three analyses resulted in a broad range of benefits values for each of the technological options. *See id.* 7-157 to-158. For example, for the "Closed-Cycle Entire Station" option, the yearly benefits ranged from $240,853 (Benefits Transfer analysis) to $28.9 million (HRC analysis) to $36.4 million (regional PPNV analysis).*Id.* at 7-158, tbl. 7.6-2. In conjunction with its monetized values, the Region provided an assessment of the reasonableness of the values. *Id.* at 7-158 to-160. The Region mentioned that, although the permittee had indicated that it was planning to submit a monetized benefits analysis, such an analysis had not yet been received. *Id.* at 7-160.The Region also noted that RI DEM had performed an estimate of the value of the fish lost to BPS since the fishery collapsed in 1986, in

which it concluded that the losses have fluctuated between $0.5 to $1.4 million a year, with a cumulative loss since 1986 of $12.7 million. *Id.* at 7-162 (citing Mark R. Gibson, RI Div. of Fish and Wildlife Research, Reference Doc. 02/2, *Ex-Vessel Value of Production Foregone in Mt. Hope Bay as a Result of Operations at USGEN of New England's Brayton Point Station* 8 (2002) at 8).

***b**. Challenges to the Region's "Biological Benefits" Analysis*

***127** Petitioner first claims that the Region has not justified the "biological benefits" of the Final Permit. Petition at 36. Petitioner challenges the Region's reliance on the "recovery of fish populations" as the principal biological benefit, claiming that the Region has not produced a predictive analysis that demonstrates that the fish will in fact recover. *Id.* Petitioner further asserts that its own model indicates that stringent levels of fishing restrictions are required for the fish to recover. *Id.* Notably, these arguments implicate many of the same objections Petitioner raised earlier with respect to alleged flaws in the Region's biological analyses under CWA sections 316(a) and (b) themselves, which we found unpersuasive. [310] *See, e.g., supra* Parts VI.A.2.b.ii.*c*, VI.A.3. b.ii.*e*, VI.B.3.b.

Petitioner, in its comments on the Draft Permit, raised arguments about the Region's analysis similar to those it raises on appeal. *See, e.g.* , RTC at IV-22 (noting that the permittee questioned whether the permit's limits would achieve the environmental benefits the Region had cited); *id.* at IV-46, cmt. 14 (stating that EPA's biological assessment was flawed); *id.* at IV-53, cmt. 20 (questioning the Region's claim that "only closed-cycle cooling will allow sufficient recovery of fish populations"). The Region provided lengthy responses to these comments. *E.g.*, RTC at IV-22 to-23,-46 to-50,-53 to-54. For example, the Region stated that, based on its biological analyses, the proposed permit intake limits along with "the strong fishing restrictions that are currently in place" would provide the fishery an opportunity to recover and that it believed it reasonable to expect such a recovery. *Id.* at IV-22; *see also id.* at IV-42, IV-54. The Region also explained why it had not accepted the permittee's data, explained what data it did rely upon and why, and explained why it made the biological assumptions it did. *E.g., id.* at IV-46; *see also* DPDD at 7-102 to-116 (providing its calculations for entrainment and impingement losses and explaining problems it and other experts had found with the permittee's studies). The Region also explained why it believed its biological analyses themselves were reasonable. RTC at IV-46 to-47. Rather than demonstrating clear error on the Region's part, Petitioner's arguments on appeal demonstrate, at most, a difference in expert opinion about the biological impacts of BPS, and the likely effects closed-cycle cooling will have on these biological impacts (i.e., the extent to which the impacts will decrease if closed-cycle cooling is implemented). We find that the Region did "duly consider" the issues raised in the comments and that the Region's approach appears rational in light of the information in the administrative record.[311] Accordingly, Petitioner has failed to convince us that remand is warranted on this issue.

***c**. Substantive Challenges to the Region's Other Benefits Analyses*

***128** In addition to questioning the "biological benefits" calculations, an issue we have just addressed in the previous section, Petitioner also challenges several other aspects of the Region's benefits calculations for the Final Permit. Petition at 37-39. Although Petitioner and UWAG raise numerous issues about the Region's benefits analyses, underlying most of these issues is a challenge to the scope of the Region's benefits assessment, more particularly a challenge to the Region's reliance on both non-use values and on qualitative benefits. Thus, we consider these issues first before turning to the remaining arguments raised in the Petition.

***(1)**Scope of Benefits Assessment: Region's Use of Non-Use Values and Qualitative Benefits*

Although Petitioner raises a few questions about the "use" values, Petitioner's (and UWAG's) primary objections to the monetized benefits analysis focus on the "non-use" values calculated by the Region and the methods used to calculate them. *Id.* at 37 (arguing that there were numerous flaws in the Region's calculations used to "establish non-use benefits"); DEBP Suppl. Br. at 34; DEBP Reply Br. at 18; UWAG Br. at 12-23. Both Petitioner and UWAG generally challenge the Region's use of the two non-use benefits analyses upon which it relied - the PPNV and HRC analyses - claiming that both are seriously flawed and that the Agency allegedly discarded them in the Final Phase II Rule. DEBP Suppl. Br. at 34-35; UWAG Br. at 12-23; *see also* Petition at 37-38. Petitioner additionally argues that the Region "unjustifiably" continued to refer to the HRC calculations even though it had agreed that these calculations might be "conceptually inappropriate." Petition at 38.

Significantly, although both participants challenge the non -use benefits values on both procedural and substantive grounds, nowhere in their briefs does either participant cite to comments that provided alternative non -use values or methods. Reading all of their arguments together (in toto), Petitioner and UWAG seem to essentially be arguing that the Region should not have included non-use benefits in its final benefits assessment (which, in effect, would mean that the non -use values should have been zero).

In a somewhat related argument, both Petitioner and UWAG also downplay the importance and/or relevance of the Region's qualitative benefits analysis to the final benefits assessment, instead suggesting that the final benefits should have been b ased solely on monetized benefits. This is especially noticeable in their discussions of the Region's cost -benefit balancing analysis (i.e., the Region's application of the wholly disproportionate standard), where Petitioner and UWAG cite to a ratio that on ly uses the monetized use values. *See* DEBP Suppl. Br. at 35; UWAG Br. at 28. It is also at the heart of Petitioner's claim that the Region erred in stating that "it was not required to perform any *monetary* estimates of benefits at all."Petition at 26 (citing RTC at IV-20,-24) (emphasis added); *see also id.* at 38-39.[312]

***129** Overall, therefore, it appears t o us that much of Petitioner's and UWAG's debate with the Region about the benefits analyses is, at bottom, a disagreement about whether non -monetized benefits and monetized "non-use" benefits should have been considered at all. Because these two overarchi ng issues permeate Petitioner's and UWAG's challenges to the Region's benefits analyses, we consider them first.

In its Determinations Document, the Region explained its approach to analyzing benefits. DPDD at 7 -126 to -160. As we summarized above, *see supra* Part VI. B.4.b.iii.a, this entailed an examination of several measures of benefits, including non-monetized quantitative and qualitative considerations (which included a consideration of both the biol ogical benefits and the public policy impacts) as well as monetized estimates. In addressing the analysis of monetized benefits and the limited role it played in the overall benefits analysis, the Region specifically stated that:

> Because of the limitations of the methods for monetizing the value of environmental resources, it is not possible to quantify with exact precision the monetary value of the environmental improvements offered by various technological options. As a result, EPA has *not* conducted these analyses to provide numeric values that will be strictly determinative of the appropriate conditions for the BPS permit. Rather, EPA has developed various types of admittedly rough *estimates* of the value of these benefits in order to provide an array of p otentially relevant information for decision -making officials to consider in applying the wholly disproportionate cost test.

DPDD at 7-135. The Region reiterated this general position in responding to comments on its approach to benefits. *See* RTC at IV-18 to-21.

The Region also stated that "[w]hen it comes to applying CWA Section 316(b)'s wholly disproportionate cost test for an individual permit development, neither statute, regulation, nor guidance memorandum dictates how benefits should b e assessed."RTC at IV-18. The Region further noted that, in developing the Draft Permit for BPS, it reviewed a number of past Agency CWA section 316(b) decisions for guidance and that it "did not [find] any cases in which the Agency estimated monetized ben efits when applying the [section 316(b)] wholly disproportionate cost test. "*Id.* Thus, in direct contrast to Petitioner's and UWAG's position, the Region indicated that not only are they not limited to considering only monetized benefits, they are not neces sarily even required to estimate monetized benefits. In support, the Region discussed several cases, all of which only contained non -monetized, quantitative and/or a qualitative assessments of benefits. *See id.* at IV-18 to-20. The Region concluded that bas ed on this precedent alone, a monetized estimates of benefits was not required for applying section 316(b)'s wholly disproportionate cost test in the development of an individual permit. *Id.* at IV-20. The Region, however, considered it not "unreasonable or inappropriate * * * to make efforts to develop monetized benefits as part of its evaluation as long as they are used appropriately in conjunction with other considerations. "*Id.* Thus, for BPS's permit, the Region generated "rough" monetized estimates, as w ell as producing qualitative and non -monetized quantitative estimates, and "used the monetized estimates reasonably in combination with other considerations, such as our nonmonetized quantitative and qualitative benefits assessments."*Id.*

***130** With respect to the relevance and importance of monetized non -use values, the Region stated that "the use value analysis by itself must be regarded as a dramatically incomplete underestimate of the total value of resources that would be preserved as a result of the new permit limits issued under CWA [section] 316(b). " RTC at IV-26. The Region also stated that "accounting for nonuse values is a critical component of developing as complete an estimate of the total value of ecological resources as possible. In some cases, the nonuse values may represent the bulk of the monetized estimate of total value, and leaving them out entirely would result in an extreme underestimate of total value."*Id.*

Petitioner, other than generally challenging the Region's position that it is not required to consider monetary benefits, does not provide any support for its position nor does it point to any case in which the Agency has stated that it is required to monetize benefits, let alone to any case indicating that the Agency is limited to considering only monetized benefits. The record demonstrates that past Agency practice did not necessarily include a monetized benefits assessment. Furthermore, several federal courts in cases involving the valuation of natural resources have indicated that monetizing environmental benefits is difficult and that it would therefore be appropriate to consider nonmonetized benefits. *See State of Ohio v. Dep't of Interior ("DOI")*, 880 F.2d 432, 462-63 (D.C. Cir. 1989) ("While it is not irrational to look at market price as *one* factor in determining the use value of a resource, it is unreasonable to view market price as the *exclusive* factor, or even the predominant one."); *Puerto Rico v. The SS Zoe Colocotroni*, 628 F.2d 652, 673-74 (1st Cir. 1980) (explaining that the value of certain resources cannot always be measured by the rules of the market place), *cert. denied*, 450 U.S. 912 (1981); *Utah ex rel. Utah Dep't of Health v. Kennecott Corp.*, 801 F. Supp. 553 (D. Utah 1992) (rejecting consent decree where state relied only on market value of resource); *see also Kennecott Utah Copper Co. v. DOI*, 88 F.3d 1191, 1230 (D.C. Cir. 1996) (noting that market value of a natural resource is almost always less than the cost of restoring the resource). Notably, the Final Phase II Rule, which Petitioner has cited as support for many of its other arguments, states that, in assessing non-use benefits for the final rule, the Agency "decided to rely on a qualitative discussion of non-use benefits."[313] Final Phase II Rule, 69 Fed Reg. 41,624 (July 9, 2004). This indicates that the Agency supports the consideration of qualitative benefits in section 316(b) analyses, especially where it does not feel it can easily monetize them. Based on all of the foregoing reasons, we do not find the Region's approach to the benefits analysis, including its decision to consider and give weight to qualitative non-use benefits and nonmonetized benefits, to be clearly erroneous. Petitioner has not demonstrated otherwise.

***131** As for non-use benefits, Petitioner only raises two specific arguments in its briefs; otherwise, it generally alleges that the two non-use benefits analyses are flawed without providing any specific arguments.[314] First, Petitioner (and UWAG) argue that the Agency's statements in the Final Phase II Rule demonstrate Agency acknowledgment that the methods are invalid. Second, Petitioner claims that the Region's unjustifiably relied on HRC calculations even though it had agreed that the approach may be "conceptually inappropriate."[315]

Petitioner's (and UWAG's) first argument goes too far. In its discussion of non-use benefits in the Final Phase II Rule, the Agency stated that "none of the methods it considered for assessing non-use benefits provided results that were appropriate to include in this final rule, and [the Agency] has thus decided to rely on a qualitative discussion of non-use benefits. The uncertainties and methodological issues raised in the approaches considered could not be resolved in time for inclusion in the rule."[316] 69 Fed. Reg. 41,576, 41,624. With respect to the HRC analysis, the Agency concluded that "due to limitations and uncertainties regarding the application of this methodology, EPA elected not to include benefits based on this approach in the costs and benefits analysis of the final section 316(b) rule."*Id.* at 41,625. Although these statements show that the Agency did not feel that it could use these methods in the national rulemaking, we do not believe that they demonstrate a clear acknowledgment that these methods are invalid in all cases.

Moreover, there are several factors to keep in mind in considering the implications of the Agency's statements about non-use benefits analyses in the Final Phase II Rule to BPS's permit. First, it is important to note that the Agency was promulgating a national rule; thus, it was attempting to measure benefits over a much larger scale than the Region was in considering BPS's permit. It would, therefore, not necessarily follow that a method yielding inappropriate results on the national level would do the same at the individual permit level. Second, although the Agency may have generally determined that it could not use these analyses in the final rule, significantly the Agency did not explicitly criticize the BPS-related analyses that were made in conjunction with the Phase II rulemaking. Third, it is important to keep in mind that the Final Phase II Rule was issued after the Region issued BPS's Final Permit. *See supra* Part VI.B.1.b.i, .iv. The Region therefore did not have the benefit of

the Agency's final conclusions regarding these methods when it issued the Final Permit. Although Petitioner and UWAG argue that the Region should be bound by these later Agency statements, we disagree especially in light of the statements themselves, which we have indicated do not dispositively deal with the issue. [317] Thus, we find that Petitioner has failed to demonstrate that the Region clearly erred in relying on non-use benefits approaches that were not used by the Agency in the Final Phase II Rule.

***132** As for Petitioner's claim that the Region relied on its HRC analysis even though it said that it agreed with comments that it was "conceptually inappropriate" and said it would not rely significantly on the method, Petition at 38, we find that Petitioner's assertions overstate the Region's position on its HRC analysis. The Region stated that it "also presented an HRC analysis that did not directly estimate the benefits * * * but that did provide relevant information for EPA to consider in assessing costs and benefits because it estimated what it would cost the public to replace the fish lost to the cooling water intake."RTC at IV-24; *accord id.* at IV-29. The Region further stated that it "has decided to continue *not* using the HRC-related analyses to infer estimated values for preserving the fish that would otherwise be lost to the BPS [CWISs]. "*Id.* at IV-30. The Region reiterates this position later in its response, remarking that "[o]nce again, EPA Region I does not propose to use the values for fish and shellfish production services of the environmental restoration projects as a proxy for the value of the fish/shellfish themselves. * * * Instead, the Agency provides this data as useful information for policy/decision-making officials to consider."*Id.* at IV-31. The Region even sums the total monetized benefits before it gets to its HRC discussion. *Id.* at IV-29. The Region's statements all indicate that it did not intend to rely on the particular values produced by its HRC analysis, although it may use them in a qualitative or nonmonetized way. Indeed, upon our review of the record, it is unclear exactly where the Region "unjustifiably relied" upon the HRC analysis. Furthermore, we do not believe that the record indicates that the Region concluded that the method was "conceptually inappropriate." The Region, in fact, makes contrary statements such as "EPA continues to believe [] that these analyses provide important information to consider in making the CWA § 316(b) permitting determinations,"*id.* at IV-30, and that the Region believes "the potential validity of this approach could be worth future consideration,"*id.* at IV-31. Petitioner has not demonstrated that the Region clearly erred on this issue.

(2)*Region's Reductions in Use Values*

Petitioner argues that the Region did not consider "relevant" the fact that it had reduced the actual economic benefits calculations for commercial and recreational fishermen resulting from closed-cycle cooling by two-thirds (down to approximately $84,000 per year) from those used in the Draft Permit determinations. Petition at 37; DEBP Suppl. Br. at 34. Petitioner alleges that the Region instead relied upon its "knowing impacts in Mount Hope Bay have been reduced" and that this is "supposedly worth *tens of millions of dollars a year* to people who do not use the Bay."[318] Petition at 37.

***133** Upon review of the administrative record, we find that the Region did not treat its revised use values as "irrelevant," as alleged by Petitioner. The Region discusses the revisions in its Response to Comments document and uses them in its benefits analyses. *See, e.g.*, RTC at IV-24-26; *see also* RTC vol. II, apps. J, K, X. The Region did not, however, rely *solely* on these use values in its benefits and cost-benefits analyses; instead, the Region additionally relied on its qualitative, nonmonetized benefits analyses and it non-use benefits analyses. *E.g., id.* at IV-21 to-24,-26 to-31. The Region, in fact, enumerated five reasons why "the use value analysis by itself must be regarded as a dramatically incomplete underestimate of the total value of resources that would be preserved as a result of the new permit limits issued under CWA [section] 316(b)."

RTC at IV-26. The remainder of Petitioner's argument is essentially a challenge to the Region's reliance on non-use and qualitative benefits, which we have already addressed above. Thus we conclude that, with respect to the Region's analysis of "use" values, Petitioner has not demonstrated that the Region clearly erred.

(3)*Consistency with EPA's Economic Guidelines*

Petitioner next claims that it and its consultant, Dr. Robert Stavins, had commented that neither of the methods the Region had used to calculate non-use benefits were consistent with *EPA's Economic Guidelines*, but that the Region failed to address its criticisms. Petition at 37-38; *see also id.*, tbl. III. According to Petitioner, the Region first asserted that it had no obligation to follow the practices in *EPA's Economic Guidelines* and then later claimed that "its analyses are, in fact, consistent with the

Guidelines," without providing a further explanation for this assertion. *Id.* at 38 (citing RTC at IV -17 n.3). Upon review of the Response to Comments document, we find Petitioner's claims to be without merit.

The footnote cited by Petitioner, in fact, demonstrates that the Region did not merely provide a conclusory, non -responsive answer as alleged by Petitioner. *See* RTC at IV-17 n.3. The Region explained that because *EPA's Economic Guidelines are guidance*, they are not binding on the Agency nor do they create binding legal requirements. [319] *Id.* The Region further explained that *EPA's Economic Guidelines* "were prepared for use by the Agency in connection with the development of regulations and Agency policies, not individual permits." RTC at IV-17 n.3 (citing *EPA's Economic Guidelines*, preface at i). The Region also pointed out that the Guidelines themselves expressly state that they are not to be used as a "rigid blueprint" for all assessments and that appropriate approaches will depend on "case-specific factors." *Id.* (citing *EPA's Economic Guidelines* at 2). Finally, the Region cited to *EPA's Economic Guidelines* as support for its economic analyses throughout its Response to Comments document. *See, e.g., id.* at IV-18 n.4, IV-21 nn.6-8, IV-22 n.9. These cites themselves imply that the Region believed that its analyses, or at least some of them, were consistent with *EPA's Economic Guidelines*. Of course, this latter point does not necessarily mean that every single aspect of the Region's economic analysis was consisten t with *EPA's Economic Guidelines*; however, the Region's analysis need not be entirely consistent with *EPA's Economic Guidelines* for the very reasons the Region articulated in its response on this issue.

(4) *Requirement of Site-Specific Study for Non-Users*

***134** Petitioner additionally questions the Region's failure to use a "site-specific study to calculate the economic benefits of the Permit to those who do not use Mount Hope Bay for commercial or recreational fishing ," implying that the Region had suggested that such a study was needed. Petition at 26; *see also* DEBP Suppl. Br. at 33. This, however, is inaccurate. The Region stated that "[w]hile it might be preferable to conduct such research in an ideal world, EPA previously explained that it was not deemed feasible as a matter of cost or timing to conduct such a primary study here. Nor, in any event, does the Agency think that such studies are required for developing individual CWA [section] 316(b) permits * * *. " RTC at IV-27 (citing *EPA's Economic Guidelines* at 59, 86). The Region also pointed out that in no other permit case that it was aware of did the Agency conduct a "site-specific contingent valuation study for developing site-specific" permit limits. *Id.* Finally, the Region noted that "many resource economists" believe that an appropriately conducted benefits transfer analysis could be used in lieu of the site -specific research study. *Id.* Petitioner has failed to demonstrate why the Region's comments on this point were erroneous and thus we do not find that a remand is warranted on this issue.

(5) *Production Foregone Error*

Finally, Petitioner alleges that the Region erred in its production foregone calculations that supported the Draft Permit, bu t failed to c orrect this error in its analyses supporting the Final Permit. Petition at 45. Petitioner claims that the Region acknowledged making a significant error in its production foregone calculation, *id.* (citing RTC at IV -47 & vol. II, app. X), but continued to re ly on the numbers generated by that method, *id.* (citing RTC at IV -69). *See also* Petition tbl. 1, at 38 -39. According to Petitioner, the error allegedly resulted in 300-fold difference in the assessment of pounds of fish lost. [320]

Petitioner's characterization of the record on this point is not entirely correct. While Stratus Consulting ("Stratus"), the Region's consultant on this issue, acknowl edged in responding to comments that "some of the values employed in the production foregone analysis were invalid," it also explained that it had re-analyzed the data for the Final Permit. RTC vol. II, app. X, at 2; *accord* RTC at IV -47 (stating that "these errors were corrected for [in] the Final Permit analysis "). This re-analysis, however, does not appear to be attached to Stratus' report, nor does it appear to be in the Response to Comments document. However, in discussing these production foregone erro rs, Stratus stated that "the practical effect[] of the[] changes was insignificant with respect to the benefits assessment." [321] RTC vol. II, app. X, at 2. The Region agreed. *See* RTC at IV-47 ("EPA assessed the import of these errors and found them to be insignificant with respect to the final benefits assessment. "). This suggests that there was little change in the overall benefit s values as presented in the Determinations Document. Thus, the mere fact that, at one point in the Response to Comments document, *see* RTC at IV-69, the Region cited to the production foregone value from the Determinations Document does not itself demonstr ate clear error. However, notwithstanding the questionable importance of Stratus' production foregone re -analysis to the Region's overall benefits analysis, because the Region evaluated and relied upon this document in developing the Final Permit, it shoul d properly be part of the

administrative record. Accordingly, if this document is not already in the administrative record, the Region is instructed on remand to add this document to the administrative record.

d. *Procedural Challenges to the Region's Benefits Analyses*

***135** Petitioner makes two procedural arguments concerning the Region's benefits analyses. First, Petitioner claims that the Region did not substantively respond to comments regarding its non -use benefits approach. Petition at 37 (claiming that the Region's responses were "uniformly dismissive, uninformative and misleading") (citing Petition tbl. III); *id.* at 38 (claiming that the Region's responses to criticisms about the PPNV and the HRC methods were no n-responsive and misleading). Second, Petitioner asserts that the Region raises for the first time on appeal an argument that its "benefits estimates were *wholly unnecessary* to its decision."Reply at 16-18. Upon review of the record, we find both of these arguments to be without merit.

Regarding Petitioner's first procedural challenge, i.e., that the Region failed to substantively respond to comments about it s non-use benefits approach, this is clearly not the case. In its Response to Comments document, t he Region stated that it had revised some of its benefits analyses in response to comments on them. RTC at IV -27,-56. Furthermore, not only did the Region provide over five, single-spaced (and in small font) pages of responses to comments on its non -use values (including the PPNV and HRC methods), *see* RTC at IV-26 to-31, the Region also cited other memoranda attached to the Response to Comments document (and which it specifically reviewed, adopted, and incorporated by reference) that also responded to comments on these points.[322]*See, e.g.*, RTC vol. II, apps. E, H. We do not find the Region's approach, or its various analyses, "uniformly dismissive," "uninformative," or "non-responsive" as alleged.[323] Moreover, as we have mentioned several times previously, *see supra* Part VI.A.3.b.ii.*b*, the regulation governing response to comments in a permit proceeding requires the Region to "[b]riefly describe and respond to all significant comments, "40 C.F.R. § 124.17(a)(2) , but does not require t he Region "to respond to each comment in an individualized manner " or require that "the Region's response be of the same length or level of detail as the comment, "*In NE Hub Partners, L.P.* , 7 E.A.D. 561, 583 (EAB 1998) , *review denied sub nom.Penn Fuel Gas, Inc. v. EPA* , 185 F.3d 862 (3d Cir. 1999) . Thus, even if the Region had adopted none of Petitio ner's comments (which is not the case here), this would not "in itself be indicative of error, especially when the comments were primarily technical in nature and raised issues subject to genuine disagreement by experts, " as these benefit assessments are.[324]*Id.* at 583.As we already found, *see, e.g., supra* Part VI.B.4.b.iii.*c*(1)-(2), the Region explained the rationale behind its revised benefits analyses. We find here that the Region did sufficiently describe and respond to the comments. Additionally, we find that the Region's analysis and approach on this issue appear rational in light of all the information in the record. Thus, Petitioner has not convinced us that a remand is warranted on this issue.

***136** As for Petitioner's second procedural objection - that the Region raises the argument that "benefits estimates were *wholly unnecessary* to its decision" for the first time during this appeal, DEBP Reply at 16 - we first note that the Region did not argue that all of its benefits estimates were wholly unnecessary to the decision, as could be inferred from the Petitione r's argument. *See* Reply at 16-18. Rather, the Region asserted that an infirmity in its *monetized* benefits analysis would constitute harmless error because its analysis went beyond the legal requirements for a benefits analysis under CWA section 316(b). Reg. Suppl. Resp. at 21 -32. Second, the Petition itself contradicts Petitioner's argument. In the Petition, Petitioner challenged the Region's position *in the Response to Comments document* that it did not have to calculate benefits. *See* Petition at 38-39 (citing RTC at IV -21,-22); *see also id.* at 26 (claiming that the Region had stated "it was not required to perform any monetary estimates of benefits at all") (citing RTC at IV-20,-24); *see also* our discussion of this issue *supra* note 312 and accompanying text. Reviewing these Respo nse to Comments document statements confirms that the Region did in fact make similar statements much earlier than in its response brief regarding the fact that a monetized benefits analysis wa s not required. RTC at IV -20,-21,-22,-24; *see* DPDD at 7-135; *see also supra* note 312 and accompanying text. We therefore find that the Region's argument was not raised for the first time on appeal and therefore consideration of this argument is n ot procedurally barred as alleged by Petitioner.[325]

iv. *Application of the "Wholly Disproportionate" Test*

In addition to questioning the appropriateness of using the wholly disproportionate cost-benefit standard, an issue we already addressed above in Part VI.B.4.b.i, Petitioner and UWAG also question the way in which the Region *applied* the standard to

BPS. *See* DEBP Suppl. Br. at 32, 35; UWAG Br. at 25 -29. Specifically, they assert that the costs outweighed the benefits by a ratio of 144:1, and that the Region erred in not concluding that this difference is wholly disproportionate. *See* DEBP Suppl. Br. at 35; UWAG Br. at 25 -29. This ratio was apparently generated by using the Region's "lowest cost estimate" to retrofit BPS - $12.2 million per year - and comparing it to the Region's commercial and recreation fishery "use" estimate of $84,376 per year. UW AG Br. at 28. [326] The ratio does not include non -use values, nor does it include any qualitative, nonmonetized values, the latter of which, b y their very nature, cannot be quantified. By dismissing all non -use benefits and ignoring the existence off qualitative benefits, Petitioner and UWAG have created a misleading and grossly exaggerated ratio of costs to benefits based solely on "use" values.[327] This ratio argument amounts to yet another attack by Petitioner and UWAG on the Region's reliance on qualitative benefits and non -use v alues in its benefits assessment. We have already addressed this question above, *see supra* Part VI.B.4.b.iii.*c*(1), and will not repeat it here.

C. *Other Alleged Errors Related to CWA Sections 316(a) and (b)*

***137** Petitioner raises several other issues in its Petition that do not fall within, and/or only partially overlap, issues previously discussed in this decision. These other issues include several alleged procedural and factual errors com mitted by the Region. We address these other issues below.[328]

1. *Failure to Respond to Comments*

Petitioner claims that the Region failed to respond to certain comments submitted by it or its consultants. Petition at 10-11. In particular, Petitioner asserts that the Region did not consider: (1) a document submitted by Dr. Joseph DeAlteris on December 17, 2002, and a revised version submitted on February 11, 2003; (2) the "Gibson 2003 Biomass Dynamics Model" (i.e., the "Gibson 2003 Draft Report "); (3) reports submitted on July 3, 2002, by Dr. DeAlteris and Dr. Ray Hilborn concerning the population of winter flounder in Mount Hope Bay; and (4) the permittee's December 6, 2001 five -volume submission (i.e., the *Final 316(a) and (b) Demonstration). Id.* at 11-14.We have already considered Petitioner's contentions regarding the first three items and concluded that the Region did consider these docu ments. *See supra*Part V.B.2.b (finding that the Region did consider the updated version of the DeAlteris study), Parts VI. A.3.e & VI. B.3.b.i (determining that the Region duly considered the Gibson 2003 Draft Report), Part VI.B.3.b.i (determining that the Region considered the DeAlteris and Hilborn studies related to winter flounder population size). [329] Thus, we find Petitioner's arguments as to those documents to be without merit.

With respect to its fourth contention, Petitioner only generally alleges that the Region failed to take into account its five-volume submission in the Draft Permit, and then fa iled to meaningfully respond to this submission in either the Response to Comments document or the Final Permit. Petitioner does not specify any particular items in its submission that the Region did not consider, nor does it provide any examples of signif icant portions of the submission that the Region failed to consider. We find that this argument lacks sufficient information and/or specificity to be considered further. *See, e.g., In re Commonwealth Chesapeake Corp.*, 6 E.A.D. 764, 772 (EAB 1997) (requiring petition to have sufficient information from which the Board could conclude that the permitting authority clearly erred); *In re P.R. Elec. Power Auth.* , 6 E.A.D. 253, 255-56 (EAB 1995) (same); *see also In re Avon Custom Mixing Servs., Inc.* , 10 E.A.D. 700, 708 (EAB 2002) (requiring "allegations of error [to] be specific and substantiated"); *In re Hadson Power 14 -Buena Vista*, 4 E.A.D. 258, 294 n.54 (EAB 1992) ("[M]ere allegation of clear error is far from satisfying burden under section 1 24.19 of providing a 'statement of reasons' showing that the permit is based on clear error. "). This is especially true in light of numerous statements by the Region in the administrative record referencing Petitioner's submission that demonstrate that the Region did in fact consider the submission. *See, e.g.*, DPDD at 4-30 n.98,-31 n. 104,-33 nn.107 & 109, 6-28,-32,-52, 7-4 n.6,-9 n.13,-11,-31 to-32,-35 & n.38,-38; *see also id.* at 6-13 (mentioning that permittee submitted materials).*See generally* RTC chs. III-IV (discussing these same issues, although not necessarily referencing the 2001 submission).

2. *Failure to Provide a Basis for the Final Permit*

***138** Petitioner claims that in two instances the Region "abandoned key premises of the Draft Permit " but failed to explain what the new basis for the Final Permit was. Petition at 14-15. Petitioner contends that this constitutes clear error.

a. *Comparison of Mount Hope Bay with Other Water Bodies*

Petitioner first alleges that, "[i]n articulating the rationale for the Draft Permit, [the Region] claimed that some species of fish had declined at a greater rate in Mount Hope Bay than in Narragansett Bay. "*Id.* at 15 (citing DPDD at 2 -3). Petitioner states that several commenters challenged this position. *Id.* (referring to A.R. 3263, Ex. 33, vol. I at 17 -31, vol. II at tab 1 & tab 11, at II.3). Petitioner claims that, in the Final Permit, although the Region asserted that it was no longer considering this "differential decl ine" to be the basis for the permit, it continued to maintain that there was a differential decline without addressing these significant comments. *Id.* (citing RTC at VII-21). Petitioner alleges that it was error for the Region to fail to respond to these comments and to fail to "articulate the basis for its 'new' position."*Id.* at 16.

Upon review, we find that not only has Petitioner mischaracterized the Region's position in both the Draft and the Final Permits, but also that the Region did respond to comm ents regarding the differential declines. In its Determinations Document, the Region relied on several factors as a basis for imposing thermal effluent and cooling water withdrawal limitations in the Draft Permit, including, among others, the fact that fis h populations in Mount Hope Bay collapsed in 1984-1985 and have not yet recovered, DPDD at 6 -28 to-29, the fact that the thermal plume covers a substantial percentage of the Bay, *id.* at 6 -23,-43,-55, and the fact that BPS entrains and impinges significant quantities of fish eggs, larvae, juveniles, and adults, as well as other types of organisms, *id.* at 6-44 to-45, 7-103 to-126. *See generally* DPDD at 6-15 to - 58, 7-102 to - 181.

In responding to comments regarding the decline of fish in the two bays, the Region stated that it had *not* based its Draft Permit on the differential decline. RTC at VII -21. The Region pointed to other facts (among them the facts listed above) that it had believed and still believed show Mount Hope Bay to be "an ecosystem in peril," thus justifying the permit conditions. *Id.* at VII -21 to -22. The Region also explained that it still believed the "[a]vailable data indicate that such a differential decline has in fact occurred, "*id.* at VII -21, and that this differential decline "only *further justifies* EPA's conclusion that reductions in thermal discharges and entrainment and impingement rates are necessary to protect the Mount Hope Bay ecological community,"*id.* at VII -22 (emphasis added). *See also id.* at VII -24. Accordingly, we find no evidence that the Region changed its basis for the permit as Petitioner alleges. Moreover, we also find that the Region did respond to the comments Petitioner cited regarding this issue. *E.g.*, RTC at VII-21 to-42.

b. *Cause of Decline of the Fish*

***139** Petitioner next asserts that, in the Draft Permit, the Region relied heavily on the position that BPS' s historic operations were largely responsible for the decline of fish in Mount Hope Bay. Petition at 16 (citing DPDD at 2 -3, 6 -4 to 6 -46,-55, 7-120,-157,-164). Petitioner claims that analyses it submitted demonstrated that other factors caused the decline of the fish in Mount Hope Bay. *Id.* Petitioner contends that, in responding to comments, the Region did not meaningfully address these analyses, but instead changed its position and claimed that the assumption that BPS caused the decline is not necessary t o the Final Permit. *Id.* (citing RTC at VII -3,-27). Petitioner also claims that despite the Region's new conclusion, not only did the Region continue to rely on the position that BPS was the primary cause for the decline of fish, but it also failed to expla in what its new basis for the permit was. *Id.* Petitioner argues that the Region clearly erred in not responding to comments, in failing to explain how the comments affected the Region's final decision, and in failing to articulate its new basis for the Final Permit. *Id.* at 16-17.

Upon review of the record, we again find that Petitioner has mischaracterized the Region's position in both the Draft and the Final Permits. In the Determinations Document, the Region stated that Mark Gibson's 1996 study "shows a dramatic increase in coolant flow starting in 1984 [that] coincides with the dramatic fish abundance decline in [the] Bay. "DPDD at 2 -3. The Region made a similar statement in its Response to Comments document as well. RTC at VII -27. In both documents, the Region concluded that there is a "correlation in time between the significant increase in plant operation " and "the significant decrease in fish abundance."RTC at VII-27; *accord* DPDD at 7-163. The Region noted in both documents that a correlation does not prove a cause -and-effect relationship, however, and that the only way to do so in this case would be "to shut the plant off, wait for the fish populations to recover, and then monitor changes in fish abundance after turning the plant back on," RTC at VII-27; *accord* DPDD at 7-163 to-164, which is not realistic. However, based on the available data, the Region considered it likely that "BPS has had a significant negative impact on the Mount Hope Bay fishery. "RTC at VII-27; *accord*

id. at VII-3; DPDD at 7-163 to-164. The Region's position on this issue has remained constant throughout the permit proceedings and therefore we do not find, as Petitioner alleges, that the Region altered its basis for the permit. Finally, we find that the Region did respond to Petitioner's comments regarding other factors that may affect fish populations, including overfishing, cormorant predation, and global warming. *E.g.*, RTC at II-3 to-5, III-22 to-24,-42 to-46,-64,-67 to-68,-106 to-107, VII-25 to-26,-27,-64; *see also supra* note 117 (mentioning the consideration of overfishing).

3. *Failure to Provide an Additional Comment Period*

***140** Petitioner additionally states that, in several other instances, the Region provided new analyses in the Response to Comments documents which allegedly denied Petitioner the right to comment on the permit. Petition at 15. In essence, Petitioner is challenging the Region's failure to provide another notice-and-comment period on these documents prior to issuing the Final Permit.

a. *Alleged Reliance on New Benefits Methods*

Petitioner alleges that the Region "improperly introduce[d]" two new methods of calculating benefits in its Response to Comments document. Petition at 17 (citing RTC vol. II, apps. E, G, & H). Petitioner also seems to challenge the Region's revision of the categories of non-users in its benefits analysis. *Id.* at 17-18.In response, the Region argues that its benefits analysis in the Response to Comments document and associated appendices was a "revamping [] of the original analysis with certain improved methods and some new information," based on comments submitted by Petitioner and other commenters. Response at 52. The Region maintains that its decision not to reopen the comment period based on these revisions was not clear error or an abuse of discretion. *Id.* at 55.

We agree with the Region and find no clear error or abuse of discretion. The regulations expressly authorize the Region to compile new materials in an effort to respond to comments submitted on the Draft Permit. 40 C.F.R. § 124.17(b) (stating that "[i]f new points are raised or new material supplied during the public comment period, EPA may document its response to those matters by adding new materials to the administrative record"); *accord In re Caribe Gen. Elec. Prods., Inc.*, 8 E.A.D. 696, 705 n.19 (EAB 2000), *appeal dismissed per stip.*, No. 00-1580 (1st Cir. 2001); *In re Metcalf Energy Ctr.*, Order Denying Review, PSD Appeal Nos. 01-07 &-08, at 27 (EAB Aug. 10, 2001), *aff'd sub nom. Santa Teresa Citizens Action Group v. EPA*, No 01-71611 (9th Cir. Nov. 21, 2002). The Region may also revise analyses and/or permit conditions based on the comments. *In re Amoco Oil Co.*, 4 E.A.D. 954, 980 (EAB 1993); *In re Old Dominion Elec. Co.*, 3 E.A.D. 779, 797 (Adm'r 1992). The permitting regulations further provide that "[i]f any data[,] information[,] or arguments submitted during the public comment period * * * appear to raise substantial new questions concerning a permit, the Regional Administrator may * * * [r]eopen or extend the comment period."40 C.F.R. § 124.14(b); *accord Metcalf*, PSD Appeal Nos. 01-07 &-08, at 28. As we have noted, "[t]he critical elements of this regulatory provision are that new questions must be 'substantial' and that the Regional Administrator 'may' take action."*In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 585 (EAB 1998), *review denied sub nom.Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999); *accord In re Ash Grove Cement Co.*, 7 E.A.D. 387, 431 (EAB 1997). Thus, based on the language of this regulation, the Board has long acknowledged that the decision to reopen the public comment period is largely discretionary. *NE Hub*, 7 E.A.D. at 585; *Amoco Oil*, 4 E.A.D. at 980; *see also Old Dominion*, 3 E.A.D. at 797.Furthermore, where the Agency adds new information to the record in response to comments, "the appellate review process affords [petitioner] the opportunity to question the validity of the material in the administrative record upon which the Agency relies in issuing a permit."*Caribe*, 8 E.A.D. at 705 n.19;*accord NE Hub*, 7 E.A.D. at 587 n.14; *Ash Grove*, 7 E.A.D. at 431.

***141** Under the circumstances presented here, there is no clear error in the Region's decision to revise its analyses based on comments received on the Draft Permit. As the regulations cited above suggest, one of the primary purposes of a permit issuer's obtaining comments on a draft permit is so that commenters may point to any problems with the initial analyses and the Region may then revise those analyses and any associated permit conditions accordingly. Two of the analyses referred to by Petitioner specifically state in their introductory sections that they are intended to respond to comments and provide modifications of the prior HRC and non-use benefits analyses in response to those comments. *See* RTC app. G at 1 (stating that Abt "presents a modification to the prior EPA [HRC] analysis"); *id.* app. H at 1 (noting that the memorandum "presents a revised analysis that addresses issues in the comments" concerning non-use benefits). According to the Region, the third

memorandum was intended to respond to comments on the PPNV analysis, to conduct a "more sophisticated benefits transfer analysis" than its earlier analysis, and to present "an even more detailed literature survey to support " this analysis. RTC at IV-28 (citing app. E). We find that these reports do indeed respond to comments and present revised analyses as the reports themselves indicate.

We also find that the Region did not abuse its discretion in deciding to issue the Final Permit without first reopening the public comment period to accept input on its revised analyses. Here, the Region amended its analyses, which resulted in somewhat similar results as before and which did not change the Region's ultimate determination regarding the permit conditions. The information contained in the revised analyses did not raise substantial new questions; rather, it responded t o comments on an issue that had already been a part of the permit proceedings. *See NE Hub*, 7 E.A.D. at 587. The fact that the Region revised its definition of the affected populations in response to Petitioner's challenges to the previous definitions does not change our conclusion. Additionally, the Region also accepted comments submitted after the comment period by Petitioner that were relevant to the Region's benefits transfer analysis approach, including its revi sed analysis (i.e., the Appendix E memorandum), and responded to these comments in its Response to Comments document. *See* RTC at IV -29. The revised benefits analyses, therefore, were an appropriate response to comments and were not evidence of a substantia l new question for which additional comment should be required. *See id.* Moreover, the Region clearly explained its new approach, thus ensuring that interested persons had an opportunity to adequately prepare a petition for review and challenge the Region's new determinations on the merits.[330] *Amoco Oil*, 4 E.A.D. at 980; *see also Caribe*, 8 E.A.D. at 705.

b. *Alleged Reliance on New Engineering Analyses*

***142** Petitioner further alleges that the Region relied on a number of engineering analyses in the Final Permit that were not subject to public review and comment. Petition at 18. In particular, Petitioner points to the analyses of the number of cooli ng towers that would be required by the Final Permit conditions and the analyses of the vapor plume impa cts of operating these towers.[331] *Id.* Petitioner also alleges that the Region's "new" analyses are flawed. *Id.; see also id.* tbl. 2 (list of alleged "engineering errors"). Specifically, Petitioner argues that even if the Region's analysis about the number of cooling towers is correct and fewer than 72 towers[332] will be needed, this would not have a significant impact on the cost of the towers or on the resultant water vapor plumes. [333] *Id.* Regarding the plume analysis, Petitioner claims that the Region relied on a model known as "SACTI," which is a purportedly inferior model that is incapable of reflecting facts about fogging at an elevated bridge near BPS.[334] *Id.* at 19, 51-52.

Upon review, we find that Petitioner has overstated the importance of these engineering analyses to the Region's determinations supporting the Final Permit. With respect to the number of towers used in its final analysis, we find that the Region in fact relied on Petitioner's estimate of 72 cooling tower cells and associated costs, while noting that it believed (based on several of its consultants' analyses) that fewer cells would likely be needed. [335] RTC at IV -86 to -87 (stating, in summary, that "in an ef fort to be conservative, EPA retained the company's cooling tower cost estimate in its line -by-line analysis"). Because the Region relied on Petitioner's estimates and not its own consultants', we do not find that the Region abused its discretion in declin ing to reopen the comment period to take further comment on its consultants' analyses - analyses that it did not rely upon.[336]

Second, with respect to the plume analyses, the Region did not "rely" on the SACTI model as indicated by Petitioner, nor did the Region's analysis on this issue change substantially between its Draft and Final Permit determinations. The Region's consultant, MFG, Inc., reviewed Petitioner's plume analysis (which relied on the "CALPUFF" model) and also used a second model - the SACTI model - for comparison purposes. *See* RTC app. M. MFG explicitly stated that it was not asserting that the SACTI model was superior to the CALPUFF model used by Petitioner's consultants and acknowledged that the SACTI model had limitations that rendered it difficult to apply to BPS. *Id.* at 7. In its conclusion, MFG expressed a number of concerns with Petitioner's vapor plume analyses based on several reasons, one of which was difference between the CALPUFF and SACTI model results. [337] *Id.* at 9-10. Although the Region generally agree d with MFG's concerns in several places in its Response to Comments document, *see* RTC at IV -86 to -87, -110 to -111, the Region provided a number of reasons completely separate from the two models for why it disagreed with Petitioner's plume predictions, *see id.* at IV-78 to-79. Nevertheless, despite its disagreement about likely plume effects, the Region appears to have included the costs of measures to mitigate the vapor plume effects in its final cost calculations. [338] *See* RTC at IV -79 to -83. Thus, we find that

Petitioner has overstated the Region's alleged "reliance" on this "unreviewed" analysis. Furthermore, the water vapor plume issue itself is not a "substantial new question." It was discussed in the Draft Permit determinations, *see* DPDD at 7-44 to-53,-168 to-169, and Petitioner addressed this issue extensively in its comments on the permit. Thus, Petitioner's recourse in this situation is to appeal the Region's final determinations regarding the vapor plume issue to the Board, which it has done.[339] Accordingly, we find no clear error or abuse of discretion in the Region's decision not to reopen the comment period to allow further input on the SACTI model or plume effects.

c. *Alleged Reliance on a New Noise Impacts Analysis*

***143** Petitioner claims that, in response to comments its engineering expert submitted on the Draft Permit regarding noise levels that would result from closed-cycle cooling, the Region offered its own Noise Impact Analysis ("NIA"), which not only critiques Petitioner's comments, but also "presents a wholly new assessment of noise impacts and the cost of technologies to address them."[340] Petition at 19 (citing RTC app. L (Hatch, Inc., *Project Report, Tetratech Brayton Point Power Station Cooling Towers, Noise Impact Assessment* (Sept. 29, 2003)). Petitioner requests that the NIA not be considered as support for the Final Permit. *Id.* Petitioner argues, moreover, that the noise assessment is flawed due to the Region's reliance on an incorrect interpretation of Massachusetts' noise requirements.[341] *Id.* at 19 n.18, & 27.Petitioner claims that MA DEP "measures noise increases against a true background," which would require BPS to consider the noise impacts not just from the cooling towers but also from the station's basic operations.[342] *Id.* at 27.Petitioner asserts that the Region did "not even attempt to demonstrate that the 72 cooling towers needed for closed-cycle cooling, taken together with existing station operations, could be operated within the regulatory limits and therefore has not demonstrated that the state requirements can be met." *Id.* (footnote omitted); *see also id.* tbl. 2, at 3, 9. Petitioner also claims that this error was compounded by the Region's decision to ignore impacts from the air pollution devices that will have to be installed. *Id.* at 27 n.25;*see also id.*, tbl. 2, at 9.

In both its briefs and its Determination Document, the Region acknowledges that it considers noise impacts as part of its section 316(b) analysis, as noise may be a secondary effect of installing and using cooling towers. Response at 58, 112; *see also* DPDD at 7-34,-43 to-44. In other words, the Region considers noise impacts to ensure that the technology is indeed "available" within the meaning of BTA; presumably, if a technology cannot legally be used because of its noise impacts, this could render said technology "unavailable." The Region explains that, although it had addressed the question of noise impacts in its Draft Permit analysis, it had undertaken a more detailed noise assessment in response to comments. Response at 58. The Region asserts that, upon consideration of the revised analysis, it concluded that cooling tower noise could be mitigated to meet state standards. *Id.* The Region further claims that it has continued to emphasize throughout these permit proceedings that the Agency does not regulate noise and that "noise emissions will be subject to state review and application of state requirements."*Id.* at 59.The Region also argues that its responses to comments were more than adequate on this issue. *Id.* Finally, the Region maintains that the comments leading to its new analysis did not raise a substantial new question and that it did not abuse its discretion in not reopening the comment period. *Id.*

***144** In its Determinations Document, the Region mentioned the fact that installation of mechanical draft cooling towers would likely lead to noise impacts. DPDD at 7-34,-37,-43 to-44,-169. The Region generally concluded that it "believe[d] based on current information that the site configuration and the availability of various types of noise mitigation (e.g., low noise fans), if any is needed, should enable retrofitting of mechanical draft cooling towers at BPS while achieving compliance with applicable regulatory standards to prevent unacceptable impacts to the nearest [residences]." DPDD at 7-43 (citing various documents, including Petitioner's analyses).[343]

Several commenters raised questions about the Region's initial examination of noise impacts, including Petitioner, who had one of its consultants analyze whether converting the entire facility to closed-cycle cooling would lead to violations of Massachusetts' noise regulations. BPS Comments on Draft Permit app. 13 (TRC Environmental Corp., *Comments on the Analysis of Non-Water Quality Impacts in the NPDES Permitting Determination for Brayton Point Issued on July 22, 2002* at 3-4 (Oct. 3, 2002)). Petitioner's consultant stated that configuring BPS with 72-cell towers, as opposed to the 20-cell tower approach Petitioner had proposed,[344] would result in an emission of over 3.5 times as much noise energy as Petitioner had estimated for the 20 towers, "which would correlate to an increase of at least 14 to 16 dBA [A-weighted decibels] over ambient sound levels."*Id.* at 3.

In response to these comments, the Region had its consultant Hatch, Inc. ("Hatch"), perform a much more detailed analysis for the Final Permit (i.e., the NIA). RTC app. L; *see also id.* at IV-83 to-85. In performing the analysis, Hatch considered ambient noise levels in the community around BPS and obtained technical and cost information from two different cooling tower manufacturers. RTC app. L. at 2-7. The more detailed analysis indicated that the predicted sound levels of the cooling towers would most likely violate Massachusetts' noise regulations, but, if that occurred, technology known to the industry and well within the state -of-the-art (e.g., certain low-noise fans, barriers on fan decks and the ground) could be installed to reduce those cooling tower noise impacts below the regulatory limits.[345] *Id.* at 4-7.

Upon consideration of the issues raised by Petitioner on appeal regarding the NIA and after a careful review of the record, w e find that the record lacks sufficient information to indicate whether or not BPS, if converted to closed-cycle cooling, will likely violate Massachusetts' noise regulations. Those regulations state that "[a] source of sound will be considered to be violating the Department's noise regulation if the source: (1) increases the broadband sound level by more than 10 dB(A) above ambient."RTC app. L at 3 (quoting Mass. Regs. Code tit. 310, § 7.10). Significantly, while the NIA considers whether the noise *from the cooling towers* will violate this regulation, it does not appear to address the question Petitioner raises on appeal of whether the entire facility's noise, with the added noise generated by the cooling towers, will likely violate the regulations or how the state determi nes "ambient" noise levels.[346] While Petitioner did not specifically raise this question in its comments on the permit, we do not find this to be procedurally barred because, at the time Petitioner submitted comments, the NIA did not exist. [347] Because of the potential significanc e of the noise impacts analysis on the determination of the appropriate BTA for BPS, and because we cannot determine whether Petitioner's concerns about the NIA are legitimate given the current state of the record, we conclude that the Final Permit must be remanded to the Region to supplement its response to comments with a rationale that addresses Petitioner's concerns raised on appeal regarding the NIA or to modify the permit requirements, as appropriate. *See In re Beckman Prod. Servs.* , 8 E.A.D. 302, 311 (EAB 1999) (remanding the permit so that the permit issuer could provide a "clearer rationale" for its permit requirements); *In re Chem. Waste Mgmt. of Ind., Inc.*, 6 E.A.D. 144, 154 (EAB 1995) (remanding the permit so that the region could supplement the record with its justification of a certain permit requirement where no such justification was provided in its response to comments); *In re Broward County*, 4 E.A.D. 705, 713 (EAB 1993) (remanding the permit so that the region could "properly respond to the issue raised by [petitioner] "). If Petitioner or any person who participates in the reman d process is not satisfied with this revised explanation or permit terms, it may challenge the Region's approach by way of an appeal to the Board. If the Region modifies the permit requirements, the Region may have to reopen the record for additional publi c comment in accordance with 40 C.F.R. § 124.14.

d. *Imposition of New Monitoring Requirements*

***145** Finally, Petitioner alleges that the Region imposed several new monitoring requirements in the F inal Permit that were not included in the Draft Permit. Petition at 19 -20. The first set of new requirements are those for discharge flow, temperature, and heat load at three internal outfalls (003A, 003B, and 003C), conditions which are set forth in Secti ons 1.A.5.a, 1. A.6.a, and 1.A.7.a of the Final Permit. Petitioner asserts that, because these are new, it was unable to comment on them and to demonstrate that they are duplicative of other monitoring requirements (i.e., those set forth in Section 1. A.4.a for Outfall 001).*Id.* at 19-20.Petitioner also claims these new requirements are onerous because "they would require installation of new equipment to take duplicative measurements. "*Id.* at 20.Petitioner similarly claims that the Region's new temperature monitoring requirements for Mount Hope Bay, which are set forth in Section 1. A.26.a.1.iii of the Final Permit, are unduly burdensome and duplicative "due to [the Region's] prior requirement that the Permittee develop a sophisticated, year -round hydrothermal model of temperatures in Mount Hope Bay."*Id.*

As we explained above, the Region may revise permit conditions based on comments it receives, and the determination of whether the comment period should be reopened in such circumstances is left to the sound discretion of the Region. *In re Amoco Oil Co.* , 4 E.A.D. 954, 980 (EAB 1993) ; *In re Old Dominion Elec. Co.* , 3 E.A.D. 779, 797 (Adm'r 1992) . If th e Region does add or revise permit terms, it must specify the reasons for doing so in its responses to comments. *Amoco*, 4 E.A.D. at 980.This "ensures that interested persons have an opportunity to ade quately prepare a petition for review and that any changes in the draft permit are subject to effective review on the merits."*Id.*

With respect to the new monitoring requirements for discharge flow, temperature, and heat load, it is clear that the Region altered these requirements in response to comments (including Petitioner's) that pointed out errors in the Draft Permit requirements. *See* RTC at I-7, VI -8. Furthermore, the Region adequately explained its rationale for changing these monitoring requirements. In the summary chapter of the Response to Comment document, the Region enumerated all of the changes made to the conditions of the permit between Draft and Final Permit issuance, including its decision to require measurements at three internal permitted o utfalls (003A, 003B, and 003C) instead of one (Outfall 003). *Id.* at I-7. In a later section of the document, the Region explained its rationale behind this change, noting that the permittee had commented that if the entire station were retrofitted to closed-cycle cooling, there would be three blowdown discharges (i.e., 003A, 003B, and 003C) and not just one as indicated in the Draft Permit (i.e., Outfall 003). *Id.* at VI-8. Because the Region agreed with the commenter, it changed the Final Permit to replace the one blowdown waste stream with three separate streams, and discharge measurements were thus also to be measured for all three. *Id.*;*see also id.* The Region also provided a rationale for imposing additional temperature and heat load measurements on these thre e outfalls. The Region explained that, in considering and responding to comments about the three waste streams and the appropriate values that should be used for heat capacity and specific gravity, it had reviewed the heat load calculation requirements in the Draft Permit and found them to be problematic. *Id.* at I-7. The Region explained that this problem could lead to underreporting of the heat load discharged into Mount Hope Bay. *Id.* It corrected this error by requiring temperature to be monitored in the th ree blowdown streams and then used those values to calculate the heat load. *Id.*

***146** We are not persuaded by Petitioner that these new requirements are either duplicative or onerous. The required flow measurements at O utfalls 003A, 003B, and 003C appear to replace the previously required measurements at Outfall 003, measurements that are no longer required by the permit. *See*Final Permit . Furthermore, as stated in the Response to Comments document, the heat load - and, necessarily, the temperature - is measured by using the combined load from the three outfalls during closed-cycle cooling and by using Outfall 001 during once -through cooling. RTC at I-7. *Compare*Final Permit §§ 1.A.5.a n.3, 1.A.6.a n.3, and 1.A.7.a n.3 *with id.* § 1. A.4.a n.5. These measurements, therefore, are not duplicative but complementary.[348]

Petitioner has also not demonstrated that such changes will be burdensome. Petitioner only generally asserts that "the new requirements are onerous in that they would require th e installation of new equipment to take duplicative measurements."Petition at 20. Because we have already determined they are not duplicative, and because Petitioner's claim that they are onerous appears to hinge primarily on the allegedly duplicative natu re of the requirements, we do not find them to be burdensome. In addition, Petitioner has not submitted any financial or other information supporting its assertions of burden. Moreover, it was Petitioner's own comments that led to the changes in these cond itions and, had Petitioner believed that measurements at the three outfalls that it pointed out would be unduly burdensome, it could have so argued in its comments. In sum, under the circumstances presented here, we find no clear error in the Region's deci sion to revise its monitoring requirements based on the comments it received, and we find no abuse of discretion in the Region's decision not to reopen the comment period.

We also reject Petitioner's arguments that the new temperature monitoring requirem ents in Mount Hope Bay are unnecessarily burdensome and duplicative because Petitioner has already developed a hydrothermal model of temperatures in the Bay and thus "the new monitoring requirement would produce duplicative information at additional unnece ssary expense to Permittee. "Petition at 20. Without further elaboration by Petitioner, we do not see how real world temperature measurements are duplicative of a computer-generated model of temperatures. Because we do not find this information to be "duplicative," and because Petitioner has provided no financial or other information in support of its argument, we also do not find that the expense is unnecessary or burdensome. Accordingly, under the circumstances alleged by Petitioner, we do not find clear error in the Region's decision to revise its monitoring requirements based on the comments it received, and we do not find that the Region abused its discretion by deciding not to reopen the comment period.

D. *Petition Issues Unrelated to CWA Sections 316(a) and (b)*

***147** Petitioner also challenges two other permit limits and conditions that are unrelated to CWA section 316: the expression of the total iron limit and the chlo rination of each of the unit condensers. Petition at 2. With respect to the iron limits, Petitioner claims that, although the Region had agreed in the Response to Comments document to Petitioner's request to

express the limit in milligrams per liter rather than pounds per day, this change was not incorporated into the Final Permit. *Id.* at 2 (referring to Final Permit § 1. A.9.a). The Region agrees with Petitioner's presentation of this issue and states that it "plans to fix this inadvertent typogr aphical error in a minor permit modification. "Response at 157. Petitioner does not respond to this offer in its subsequent briefs, nor does either party indicate whether this minor permit modification process has been implemented. On remand, therefore, if this modification has not yet been performed, the Region is directed to amend the permit to fix this typographical error.

Petitioner also claims that the Final Permit is silent on the issue of chlorination of each unit condenser. Petitioner claims that "[t]argeted chlorination as described in the 1993 permit would remain necessary in a closed -cycle system."Petition at 2. In response, the Region asserts that Petitioner never made a showing that targeted chlorination would be necessary with a closed-cycle system, nor did it comment on this issue in its comments on the Draft Permit. Response at 157. The Region explains that the regulations require a showing that targeted chlorination is necessary before it may be authorized. *Id.* (citing 40 C.F.R. § 423.13(d)(2)). The Region notes that it will be open to considering a request from Petitioner documenting the need for targeted chlorination. *Id.* at 158.In its subsequent briefs filed on appeal, Petitioner did not address this issue further, or point to anywhere in the record where it may have raised this issue.

We read Petitioner to be requesting that it be allowed to discharge free available chlorine and/or total residual chlorine fr om its units in exceedance of the limits established in the regulations at 40 C.F.R. § 423.12(b) and (c). The regulations, however, specifically provide that a utility's discharges may not exceed the regulatory limits for these pollutants "unless the utility can demonstrate to the Regional Administrator * * * that the units in a particular location cannot operate at or below this level of chlorination."40 C.F.R. § 423.13(c)(2). Accordingly, because Petitioner has not yet made such a demonstration to the Region, we do not find that the Region clearly erred in not allowing BPS to exceed these chlorine limits.

VII. *CONCLUSION*

***148** The NPDES permit for BPS is remande d with respect to two issues, one related to section 316(a) and one related to section 316(b). These are:
(1) *Five Day Exceedance Value Used to Derive Thermal Effluent Limits Under Section 316(a)* : The Region must provide an explanation for its selection of five days as the frequency for temperature exceedance used in deriving the thermal effluent conditions under CWA section 316(a) in BPS's Final Permit. The Region should supplement the record as necessary during the remand process. Alternatively, the Regio n may decide to modify this value. If so, the Region must provide a sufficient explanation for the new value.

(2) *Revised Noise Impact Analysis Used in Determining the BTA Under Section 316(b)* : The Region is directed to supplement its response to comments with a rationale that addresses the concerns raised by Petitioner on appeal regarding the NIA, which is an element of the Region's "best technology available " determination under CWA section 316(b), or the Region may modify the permit requirements, as appropriate.

The Region is also directed to amend the permit to fix the typographical error regarding the expression of total iron limits in the permit. In addition, the Region is directed to place Stratus' production foregone re -analysis in the administrative record if it is not currently in the administrative record. The Board finds no clear error with respect to all other issues raised on a ppeal. We also find no issues involving either the Region's exercise of discretion or an important policy considerat ion that warrant a change to the conditions of the permit. The Region is directed to reopen the permit proceedings for the limited purposes identified with respect to the above -listed issues. As necessary, the Region may have to reopen the record for addit ional public comment in accordance with 40 C.F.R. § 124.14. Petitioner or any person who participates in the remand process and is not satisfied with the Region's decision on remand may file an appeal with the Board pursuant to 40 C.F.R. § 124.19. The subject matter of any such appeal must be limited to the above-listed issues. An appeal of the Region's decision on remand is required to exhaust administrative remedies. 40 C.F.R. § 124.19(f)(3).

So ordered.

Footnotes

1 While this appeal was pending, USGen New England, Inc., the original petitioner in this case, transferred ownership and title of Brayton Point Station to Dominion. *See* Motion to Substitute Dominion Energy Brayton Point, L.L.C. for USGen New England, Inc. as Petitioner at 1 (Feb. 2, 2005). USGen thereafter filed a motion requesting that the Board substitute Dominion as Petitioner in this matter, *see id.*, which the Board granted. Order Substituting Petitioner (EAB Mar. 1, 2005). Thus, Dominion will be used in place of USGen in the caption, and throughout this decision "Petitioner" will refer to both Dominion and its predecessor in interest, USGen.

2 The missing "re-analysis" details the production foregone calculations performed by Stratus Consulting in response to comments pointing out several errors in the initial calculations.

3 This is the Region's highest cost estimate and includes costs for vapor plume abatement equipment. *See* Administrative Record ("A.R.") 3346, Exhibit ("Ex."). 2, Vol. I (U.S. EPA, New England Region 1, Responses to Comments, Public Review of Brayton Point Station, NPDES Permit No. MA0003654, at IV-35 to-36 (Oct. 3, 2003)) [hereinafter "Response to Comments document" (in text) or "RTC" (in citations)]. We note that, where available, the first time we cite to a document we will provide the administrative record number for each document we discuss (i.e, the "A.R." number) as well as the exhibit number in this appeal (i.e., the "Ex." number) for that same document.

4 "E.A.D." refers to the Environmental Administrative Decisions Reporter. All Board decisions published in the Environmental Administrative Decisions Reporter since 1992, as well as certain other unpublished decisions, are also available at the Agenc y's website at *www.epa.gov/eab/*.

5 States that have received authorization from the Agency under section 402(b) administer the NPDES permit program within their boundaries in li eu of the federal government. 33 U.S.C. § 1342(b), (c). As of today's date, Massachusetts has not received such authorization. *See* http:// cfpub2.epa.gov/npdes/statestats.cfm (viewed Jan. 24, 2006); *see also* EPA Region I Response to Petition for Review at 6. Thus, EPA (and, in particular, Region 1) continues to issue NPDES permits within the state pursuant to secti on 402(a).33 U.S.C. § 1342(a); *In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 702 n.4 (EAB 2001); *see also Ark. v. Okla.*, 503 U.S. 91, 103 (1991) ("In the absence of an approved state program, the EPA may issue an NPDES permit under § 402(a) of the Act."). Although EPA issues NPDES permits in Massachusetts, the state maintains permitting authority under Massachusetts law. *See*Mass. Gen. L. ch. 21, § 43 (2004); Mass. Regs. Code tit. 314 (2004). Generally, when the Region issues an NPDES permit in Massachusetts, MADEP simultaneously issues a permit under state law, which it did in this case. *Id.*;*see also In re Westborough*, 10 E.A.D. 297, 300 n.2 (EAB 2002). The appeal before the Board is limited to Petitioner's challenge to the federally-issued permit, since the state permit can only be challenged pursuant to state law. *See In re W. Suburban Recycling & Energy Ctr., L.P.*, 6 E.A.D. 692, 704 (EAB 1996); *In re City of Fitchburg*, 5 E.A.D. 93, 97 (EAB 1994); *see also Roosevelt Campobello Int'l Park Comm'n v. EPA*, 684 F.2d 1041, 1056 (1st. Cir. 1982) (explaining that "federal courts and agencies are without authority to review the validity of requirements imposed under state law").

6 The Act required, prior to 1989, application of the "best practicable control technology currently available " (otherwise known as "BPT") for point sources other than publicly owned treatment works. CWA § 301(a)(1)(A), 33 U.S.C. § 1311(a)(1)(A).

7 Under section 306 of the Act, EPA establishes a set of standards applicable to new sources, commonly referred to as New Source Performance Standards, which are based on the "best available demonstrated control technology. " 33 U.S .C. § 1316(a)(1), (b)(1)(B), (e); *see Riverkeeper*, 358 F.3d at 185; *Cronin*, 898 F. Supp. at 1056.

8 Technically, section 301(b)(2)(F) also applies. 33 U.S.C. § 1311(b)(2)(F). That section states that for those pollutants not falling within sections 301(b)(2)(C), (D), or (E) - the provisions governing toxic pollutants and conventional pollutants - section 301(b)(2)(A) applies. Because section 301(b)(2) *(A)*, and not 301(b)(2) *(F)*, contains the actual standard for effluent limitations for non-conventional, non-toxic pollutants, we cite that section as the applicable, relevant provision above.

9 The statutory standard has also, on occasion, been referred to as "BATEA." *See, e.g., In re Pub. Serv. Co. of N.H.*, 1 E.A.D. 332, 337 (Adm'r 1977). The participants, however, generally use the acronym "BAT" in discussing this standard, as do EPA's regulations. Accordingly, we too will use this acronym.

10 Generally speaking, a facility that discharges heated effluent typically has withdrawn that water from the same or a nearby b ody of water. These water withdrawals are made via the CWISs.

11 The "balanced, indigenous population of fish, shellfish, and wildlife in and on the body of water" is often referred to as the "BIP."

12 According to the regulatory definition of "balanced, indigenous community," it is intended to by synonymous with the statutory term "BIP." 40 C.F.R. § 125.71(c). For clarity's sake, we will use BIP for both terms hereafter.

13 The Board does not reach the question of whether the statute and regulations require the Agency to undertake step 4 in cases where the applicant meets step 2 but not step 3. The language of the statute, which puts the burd en of obtaining a variance on the applicant, leaves it far from clear that the Agency must undertake step 4 before denying a variance, although we recognize th e Agency has generally followed this practice. *See* Oral Arg. Tr. at 45-46.

14 "Dry cooling" technology, however, which is not at issue in this case, virtually eliminates the need for outside cooling water. *See* Response at 5; DPDD at 4-26.

15 Even with a closed-cycle system, some withdrawals are necessary to "make up" for the water that may be lost from the system. *See* Response at 5.

16 BPS's Units 1, 2, and 3 commenced commercial operation before the CWA was enacted, in 1963, 1964, and 1969, respectively, and thus were constructed with once-through, open-cycle cooling systems. DPDD at 3-1. Unit 4, which began operation sometime in the 1970s after the enactment of the CWA, was originally required to be operated as a closed -cycle unit. *Id.* However, in 1982, Unit 4 was allowed to convert to open -cycle operations, and the maximum flow limitations in the permit were raised to 1,009 million gallons per day ("MGD"). *Id.* at 3-3.In 1984, BPS began operating Unit 4 as an open -cycle cooling system. *Id.* at 3-3 n.2. That same year, the flow limits were again increased to their current limit of 1,452.5 MGD. *Id.*

17 The renewal application was submitted by New England Power Company, which owned the Station prior to USGen New England's purchase of BPS in September of 1998. *See* DPDD at 6-1 to-2.

18 We use the terminology "baseline" thermal effluent limitations to mean those effluent limitations that would apply to BPS absent a CWA section 316(a) variance.

19 Because the thermal discharge limits in the Final Permit represent an approximately 96 percent reduction from BPS's current cooling water discharges, the parties appear to assume that the only way BPS could limit its discharges to this degree would be to operate all of its units in closed-cycle mode.

20 The Final Permit also imposed additional restrictions during the winter flounder spawning season (February through May).

21 Petitioner also filed a Motion for Leave to Submit Brief in Connection with Petition for Review, a Motion for Evidentiary Hearing, and a Request for Oral Argument. In connection with our granting review of the Petition and setting up a briefing schedule, w e granted Petitioner's request to s ubmit an additional brief. *See* Order Granting Review at 6 -7. In July 2004, the Board denied Petitioner's motion requesting an evidentiary hearing, *see* Order Denying Motion for Evidentiary Hearing (July 23, 2004), but granted Petitioner's motion requesting oral argument, *see* Order Scheduling Oral Argument (July 23, 2004).

22 The Board's decision to grant amicus rather than intervenor status was challenged by Rho de Island via an interlocutory petition to the First Circuit Court of Appeals. The First Circuit ultimately dismissed the petition for want of appellate jurisdiction. *See Rhode Island v. EPA*, No. 04-1513 (1st Cir. Aug. 3, 2004).

23 TRWA's motion was in the form of a letter. TRWA did not file any other documents with the Board. Thus, the Board considers TRWA's letter as both its motion and its brief in this matter.

24 The Board also received submissions from Mr. Wesley Crawley and the Prudence Conservancy on March 17, 2004, and June 18, 2004, respectively. Mr. Crawley's submission was a note stating that "it is far more important to supply us with affordable electricity then worry about discharging hot water into the bay. "Note from Wesley Crawley (Mar. 8, 2004). He also enclosed a "Letter to the Editor " that he had written. Prudence Conservancy submitted a brief letter indicating that it supports the permit issued by the Region. Letter from Allan D. Beck, Board of Directors, Prudence Conservancy, to Clerk of the Board, EAB (June 1, 2004). Prudence Conservancy also attached a newspaper commentary concerning BPS entitled "Plant creates aquatic purgatory." *See id.* attach. Because these submissions appear to be more akin to comments on the Final Permit than legal briefs, we do not consider Mr. Crawley or Prudence Conservancy to be amici in this appeal, nor do we consider their submissions to be amicus

briefs.

25 Rhode Island subsequently filed a motion asking the Board to accept its brief as timely. Based upon the reasons therein, the Board granted the motion, and Rhode Island's br ief was accepted as timely filed. *See* Order Granting Motion to Accept Rhode Island's Brief as Timely Filed (Aug. 6, 2004).

26 STB subsequently filed a motion asking the Board to accept its brief as timely. Based upon the reasons therein, the Board granted the motion, and STB's brief was later accepted as timely filed. *See* Order Granting Motion to Accept STB's Brief as Timely Filed (Aug. 6, 2004).

27 While invited to participate in the oral argument, STB and TRWA declined.

28 This approach - confining the Board's review to the administrative record before the permit issuer rather than undertaking de novo review - is consistent with how the Board, pursuant to regulation, has, since its inception, handled permit appeals un der the other environmental statutes. In 2000, EPA modified its CWA permitting regulations through rulemaking to conform to this "record review" model for Board review. The background and history of the 2000 amendments to the permitting regulations can be found in our earlier decision in this case addressing Petitioner's request for an evidentiary hearing. *See In re Dominion Energy Brayton Point, LLC (formerly USGen New England), Brayton Point Station* , Order Denying Motion for Evidentiary Hearing, NPDES Appeal No. 03-12, slip op. at 6-10 (EAB July 23, 2004), 11 E.A.D. _.

29 Whether or not a petitioner raised an issue during the comment period is a threshold question that the Board typically consid ers prior to granting review. *In re City of Phoenix* , 9 E.A.D. 515, 524 (EAB 20 00); *In re Rockgen Energy Ctr.* , 8 E.A.D. 536, 540 (EAB 1999). In this case, for a variety of reasons, *see* Order Granting Review at 4-6, the Board granted review of the entire permit prior to making threshold determinations for every single issue raised by Petitioner. Although it appeared, as a general matter, that Petitioner had raised the bulk of the issues it was appealing during the comment period, because of the multiplicity of issue s being raised, the Board did not specifically determine whether every single issue met this threshold prior to granting review. Consequently, in this decision, whenever one of the participants asserts that a particular issue was not raised during the co mment period, the Board will consider this threshold question first, prior to considering the substance of the issue.

30 Federal courts have come to similar conclusions whe n reviewing the Agency's technical and/or scientific judgments in the context of rulemakings. *E.g., Natural Res. Def. Council, Inc. ("NRDC") v. EPA* , 824 F.2d 1258, 1286 (1st Cir. 1987) (noting that courts generally give "deference to the Agency's substantive conclusions in complex regulatory matters "); *Kennecott v. EPA* , 780 F.2d 445, 448 (4th Cir. 1985) ("To achieve a reasoned result in a dispute over technologies, EPA is bound to consider industry data, but is not bound to accept it. * * * [Thus,] we ask whether EPA's technical judgements find support in the record and whether the y reflect the rule of reason, not the imposition of fiat. "); *Nat'l Ass'n of Metal Finishers v. EPA* , 719 F.2d 624, 657 (3d Cir. 1983) (holding that the Agency's "choice of scientific data and statistical methodology " was entitled to respect as long as the Agency followed the prescribed procedures), *rev'd on other grounds sub nom. Chem. Mfrs. Ass'n v. NRDC* , 470 U.S. 116 (1985) ; *BASF Wyandotte Corp. v. Costle*, 598 F.2d 637, 652 (1st Cir. 1979) (explaining that review is limited "especially where the Agency must overcome technological and scientific uncertainty in making its delegated decisions").

31 We note that at o ral argument, the Board stated that since these administrative record issues had not yet been addressed, participants could reference the disputed materials, "but if the Board ultimately determines that those materials are not and should not be part of the administrative record, it will treat any references to such materials during this argument as stricken."Oral Arg. Tr. at 6.

32 Petitioner did not submit these nine items with its Motion to Supplement the Administrative Record. Petitioner did, however, attach eight documents to its Petition (i.e., Attachments A -H), some of which appear to be the items listed in Petitioner's first motion to supplement the record. Petitioner did not explicitly identify which Petition attachment was associated with which it em number in its motion, and not all of the Petition attachments appear to be related to the Petitioner's Motion to Supplement t he Administrative Record. Thus, where we were able to clearly identify the Petition attachment that was associated with an item number listed in the motion, we added that identifier to our above listing of the items at issue.

33 UWAG also submitted this item as an attachment to its brief. UWAG Br. attach. 6.

34 Petitioner has not included these "communications" with its motion (or, as far as we can tell, with its Petition), and therefore it is unclear to what it is referring. Because Petitioner has failed to adequately present or describe these documents (or even demonstrate that any such documents even exist), we deny Petitioner's request to include these "communications" in the

administrative record and do not consider Item 7 further. Moreover, we note that the Region indicates that, to the extent tha t any such documents may exist, it is likely they would reflect privileged deliberative consultations between it and Massachusetts. Reg. Opposition to Mots. to Suppl. A.R. at 12. As such, they would likely be treated similarly to Item 5, and our analysis set for th in Part V.A.3.g. would apply to them as well.

35 Petitioner does not explicitly identify Item 8 as Attachment H to the Petition. *See supra* note 32. Attachment H, however, is a series of e-mails between a regional attorney and a regional engineer concerning "'back of the envelope ' estimates" for piping for the closed-cycle cooling units and mentions locating the towers at the south end of the BPS property. Pet ition attach. H at 3. Thus we assume Attachment H is the document to which Petitioner refers.

36 Petitioner also submitted this item as Exhibit A to its supplemental brief.

37 Petitioner also submitted this item as Exhibit Q to its supplemental brief.

38 Petitioner's fifth attachment to its second motion was an October 6, 2003 letter from Petitioner's attorneys to Region 1 with various attachments. *See* Second Mot. to Suppl. A.R., Ex. E. This series of documents appears to be the same as those Petitioner requested be added to the record in its first motion to supplement and that we refer to above as Item 3. Petitioner also subm itted one of the attachments to the October 6, 2003 letter - a June 16 and 20, 2003 e -mail exchange between Joseph DeAlteris, one of Petitioner's consultants, to Mark Gibson, RI DEM - as Exhibit S to its supplemental brief. Because we have already listed this series of documents, including the June 16, 2003 e-mail, as Item 3, we do not list them again as a separate "item number."

39 Those documents listed by the Region that are duplicative of th e materials mentioned in Petitioner's motions to supplement the record are not given new "item numbers"; rather, we footnote this information above. *See supra* notes 33, 36, 37, 38.

40 The Region states that Item 1 had initially been inadvertently left out of the administrative record even though the Region h ad considered it. Reg. Opposition to Mots. to Suppl. A.R. at 5. The Regi on further indicates that it put Item 1 in the administrative record in October of 2003 upon being notified by Petitioner that it was missing. *Id.* As for the cormorant videotape (Item 4), the Region explains that the confusion about its being in the record occurred because it keeps the tape separate from the documen tary information in the record in order to avoid its being removed. *Id.*

41 In its Opposition to the Second Motion to Strike, Petitioner rebuts the Region's arguments regarding some of the documents at issue - in particular, Items 3, 9, and 10 - but does not address the other documents. DEBP Opposition to Second Mot. to Strike at 10-11. Petitioner indicates that UWAG's opposition will address other documents. *Id.* at 12.UWAG, however, does not refer to Items 1, 4 or 12. *See* UWAG Opposition to Second Mot. to Strike at 9-11.

42 Petitioner has not contended that the Region erred in concluding that the August 5 and 6 meetings were not "public hearings" within the meaning of sections 124.12 and 124.18.

43 As noted below, this is an incorrect characterization. The record had not "closed" at the time of receipt of this information.

44 To consider such late-arriving information, the Region would need to reopen the record and then reissue its decision.

45 Notably, despite Petitioner's intimat ions that the Region was favoring positions adverse to Petitioner by accepting "late" documents from other submitters, there is evidence in the record that Petitioner submitted several documents after the close of the comment period, which the Region accepted. *See* A.R. 3373, Ex. 14 (documents submitted on behalf of Petitioner on December 17, 2002); A.R. 3132, Ex. 15 (documents submitted on behalf of Petitioner on February 11, 2003); A.R. 3248, Ex. 17 (documents submitted on behalf of Petitioner on July 30, 2003); *see also* Response at 9; CLF Memo Objecting to Suppl. A.R. at 2.

46 Petitioner claims that the data LMS used to calculate the trawl efficiencies were th e same underlying data used in several of the RI DEM reports the Region relied upon in its Determination Document. DEBP Suppl. Br. at 28 n.60. Petitioner states that it only recently obtained the "missing data" from a public records request. *Id.* Ostensibly, this is Petitioner's excuse for not having its consultants perform these calculations earlier and submit them into the administrative record in a timely fashion, although i t does not explicitly say so.
In response to Petitioner's arguments about Item 14, the Region argues that it has never seen the LMS Memo before, that it is outside the scope of the Petition, and that it and arguments regarding it should be stricken from the record. *Id.* at 28 n.46; *see also* Reg. Second Mot. to Strike at 5. The Region furth er asserts that, based on a quick review of this information, Petitioner's analysis

"appears to be invalid. " Reg. Suppl. Resp. at 28 n.46. Rhode Island similarly argues that the LMS Memo is "wildly outside the scope of the administrative record, " is a new argument that is inconsistent with other studies, and is also seemingly flawed. RI Suppl. Br. at 11 & nn.4 -5. Rhode Island further requests that, if the Board accepts the new information from Petitioner, that the Board likewise accept data from Rhode Islan d scientists rebutting Petitioner's arguments. *Id.* at 11 n.5. In particular, Rhode Island submits a memorandum analyzing LMS's June 1, 2004 calculations. *See* RI Suppl. Br. attach. (Memorandum from Mark Gibson, Deputy Chief, RI DEM Division of Fish and Wildlife, to Brian Wagner, RI DEM Office of Legal Services (June 28, 2004)). Significantly, Petitioner is not requesting inclusion of the data itself but rather the LMS Memo that contains various calculations based upon the data. The 2004 LMS trawl efficiency calculations themselves, and the subsequent counter -calculations by Rhode Island, are clearly new information that were not (and could not have been) conside red by the Region in the development of the permit. Moreover, although Petitioner implies that it neglected to raise this issue earlier because of the Region's failure to place the underlying data in the record, it does not suggest that the underlying data were only recently created, nor does it explain why it could not have requested the data earlier than it did, given that the Region apparently relied upon the data in its 2002 Draf t Determinations Document. We therefore do not find any justification for i ts late submission. Because we do not supplement the record with Petitioner's new calculations, we likewise do not accept Rhode Island's rebuttal memorandum.

47 As the title page of the *NPDES Manual* notes, "[t]he statements in this document are intended solely as guidance. This document is not intended, nor can it be relied on, to create any rights enforceable by any party in litigation with the United States. "*NPDES Manual* at tit. p. Further, the Manual states that EPA officials may "act at variance with the guidance."*Id.*

48 In its motions to supplement the record, Petitioner did not explicitly request that Attachments A and E to the Petition be added to the administrative record. In a footnote in its Petition, however, Petitioner does indicate that Attachment A was intended to be part of its first motion to supplement. Petition at 5 n.4. None of the participants have included arguments concerning this document - in all likelihood due to Petitioner's failure to mention this attachment in its motion - although the Region did generally request that this document be stru ck from the record. *See* Reg. First Mot. to Strike at 1. Significantly, Attachment A is another internal MA DEP e-mail. There is no evidence that the Region ever received this e -mail prior to its issuance of the Final Permit. Consequently, it is analogous to a postdecisional record and thus is stricken from the record on appeal.
With respect to Attachment E, we do not see where Petitioner requests it to be part of the record, although Petitioner does c ite the document in its Petition. *See* Petition at 28, 30. Attachment E is entitled "Comments on the LMS comments on Brayton Pt. NPDE [sic] permit."It has no other identifying marks. Among other things, it is not clear who prepared it, who had a copy of it, and when it was generated. Petitioner alleges that it is an MA DEP document but provides no additional identifying information. *Id.* Because there is no evidence that the Region ever had a copy of this document prior to permit issuance, it too is stricken from the r ecord on appeal.

49 Notably, unlike Items 6 and 9, it is evident that the Region did actually see this memorandum prior to permit issuance (and, in fact, prior to the comment period on the Draft Permit) bas ed on the fact that Mr. Liberti forwarded a copy to the Region via a March 8, 2002 e-mail. Thus they cannot be considered similarly to our treatment of Items 6 and 9. *See supra*Part V.A.3.d.

50 In several of our previous permit cases, we have concluded that, with respect to comments made prior to the start of the comm ent period, unless a commenter makes it clear during the public comment period that th ese pre-comment period statements should be considered as part of the permit proceeding, they do not become part of the administrative record. *In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 706 (E AB 2002); *In re City of Phoenix*, 9 E.A.D. 515, 529 & n.21 (EAB 2000) , *appeal dismissed by stip.*, No. 01-70263 (9th Cir. Mar. 21, 2002).

51 If a draft report is specifically discussed in comments received on the draft permit, then, depending on the nature of the co mments, it may be appropriate to include the draft in the administrative record. This was not the situation in the case before us.

52 For example, a May 2003 draft report by Mark Gibson was submitted to the Region prior to permit issuance, RTC at IV -66, was discussed in the Response to Comments documents, *see id.* at IV-66 to -67, and was included in the administrative record, A.R. 3149.

53 As we mentioned previously, *see supra* note 35, the engineer states that he did a "quick review" of the permittee's information and provides his "'back of the envelope' estimates." Petition attach. H at 3.

54 During internal Agency deliberations, it is very possible that the various staff members may disagree with each other over th e conditions that should be imposed in a permit as well as the significance o f materials in the record. It is therefore the final decision of the permit issuer that is of true relevance, and the ultimate issuer of the permit need not accept the advice of some of i ts technical and legal staff. *San Luis Obispo*, 751 F.2d at 1327.

55 Although this document could arguably be termed "correspondence with other regulatory agency personnel,"*see NPDES Manual* at 194, we conclude, based on the content of the e -mails (which clearly demonstrate that they are an internal, predecisional conversation between two regional staff members that was merely copied to staff at MA DEP), that they should not b e in the administrative record.

56 The Region also addresses Item 7, the alleged "communications between Region I and MA DEP regarding the text of the Massachusetts water quality certification," in this section of its opposition brief. We already dealt with this Item above. *See supra* note 34.

57 It is unclear to us whether the final version of this document was intended to be part of the Region's response to comments o r whether it was intended to be Massachusetts' response to comments on the state permit. We assume that, if it is the former, that the final version of the document was placed in the administrative record for this permit proceeding.

58 This does not mean that all discussions with state re gulators are considered privileged deliberative communications. Notably, the Region has not excluded all discussions it has had with other states' regulatory personnel. There are several memos in the administrative record that document meetings with member s of Georgia, Florida, and South Carolina's environmental agencies. *E.g.*, A.R. 3328, 3329, 3330. Presumably, because the Region is not coordinating permit issuance with these state agencies and is not consulting with these states in its deliberative processes, it is not claiming deliberative privilege.

59 In its motions to supplement the record, Petitioner does not request that Attachment F to the Petition be added to the admini strative record, although it does cite to it in the Petition. *See* Petition at 31 -32. Thus, none of the participants have included a rguments concerning this document, although the Region did request this document generally be struck from the record in its First Moti on to Strike. *See* Reg. First Mot. to Strike at 1 (requesting Petition Attachments A through H be struck). Attachment F consists of a series of two e -mails dated October 12, 2001, and October 15, 2001. The first is from Todd Callaghan, who works for the Commonwealth of Massachusetts, and is addressed to David Johnston, an MA DEP employee, with courtesy copies sent to various Massachusetts and federal employees (including staff at the Region). It states that a document is attached to the e -mail that details the steps the advisory group took to put together the critical temperature tables. The second e -mail, which responds to the first, is from Phil Colarusso of Region I updating Mr. Callaghan on the progress of EPA's critical temperature analysis and posing some questions about trophic effects. A courtesy copy was also sent to other regional staff, MA DEP staff, and other governm ental personnel (e.g., from the National Oceanic and Atmospheric Administration). Both appear to be predecisional, deliberative documents. We find that these two e -mails would also fall within this category of privileged records and thus should be stricken from the record on appeal.

60 Insofar as Petitioner is claiming the Region was biased in its decisionmaking, we address this issue in the next section.

61 Notably, despite its assertion that the administrative record was not prepared as required by 40 C.F.R. § 124.18 and the *NPDES Manual*, Petit ioner has not specifically cited any portion of the regulation or the Manual containing a requirement on this cross-referencing issue.

62 During our review of this permit, we spotted several instances where the Region had stated that a further discussion was located "elsewhere," but we only observed one occasion where the referenced discussion was apparently not, in fact, in the Response to Comments document. (We refer to the Region's responses to comments on the number of days that it allowed the temperature to exceed the critical temperature in deriving the thermal effluent permit conditions.) Significantly, it is because we could no t find (nor did the Region point us to) the "detailed discussion" located "elsewhere" that we are remanding the permit on this issue. *See infra* Part VI. A.3.b.ii.*d*. Furthermore, contrary to Petitioner's assertions, the Region did provide discussion "elsewhere" on its selection of a critical temperature threshold. *E.g.*, RTC at III-10 to-11,-31 to-34,-65; *see also id.* at III-12,-23 to-25 (discussing the related issue of acclimation); *id.* at III-24,-31 (reaffirming its temperature threshold analysis in the Chapter 6 of the DPDD).

63 Admittedly, it would be easier to review the document if every time the Region responded to a comment that duplicated, at lea st in part, a response to another comment, the Region had explicitly referenced the precise location of this other response, especially in a response to comments document as lengthy as the one in this case. We encourage the Region to do so in the future. If citing t o the actual page number is too onerous, such cross -references could instead be in the form of citations to the relevant comment or response number(s).

64 Petitioner also asserts that this could have been avoided had the Region afforded Petitioner an evidentiary hearing. This is sue was addressed in our Order Denying Motion for Evidentiary Hearing, and we will not reconsider this issue here.

65 Notably, in administrative penalty cases at the Agency, the Region is often called the "complainant." There is no negative connotation intended to be associated with this word.

66 In its Petition, Dominion raises similar concerns with respect to other comments it submitted. We consider those specific concerns when we address the related substantive issues.

67 In certain circumstances, a region may prepare a "statement of basis" instead of a fact sheet when it issues a draft permit. *See* 40 C.F.R. § 124.7. This is not one of those cases.

68 As we explained above, *see supra* Part II.B, where an applicant demonstrates that otherwise applicable technology-based limitations or WQSs are more stringent than necessary to protect the BIP but fails to demonstrate that its proposed section 316(a) variance will protect the BIP, the Agency has interpreted the statute to authorize it to impose alternative effluent limitations that it finds do meet the section 316(a) standard.

69 Two participants - UWAG and TRWA - did not include any section 316(a)-specific arguments in their briefs.

70 Rhode Island contends that Petitioner "has not even suggested that cost or cost/benefit analyses should be performed as part of Region I's review of thermal discharge issues under section 316(a)." RI Suppl. Br. at 14. Although we agree that certain of Petitioner's cost and cost-benefit arguments do indeed seem to be targeted at CWA section 316(b), *see infra* note 71, we find that this particular argument concerning cost effectiveness *is* related to section 316(a) as it specifically references "reducing thermal discharges." In fact, because this argument is clearly a section 316(a)-based argument, we will not consider it in our section 316(b) discussion.

71 Petitioner further contends that the Region failed to perform certain cost and benefit analyses and performed a noise impact analysis using an erroneous standard. Petition at 26-27. Petitioner, however, does not specify whether these contentions are raised in connection with the Region's application of section 316(a) or section 316(b). *See id.* At the outset of this series of arguments, Petitioner generally mentions the Region's BAT and BTA analyses, thus referencing both CWA provisions. *See id.* at 25 (pt. V.B.2). Although its argument in subpart V.B.2.*a* pertains solely to section 316(a), *see id.* (referring to "thermal discharges"), it is unclear which section or sections of the Act its arguments in subparts V.B.2.*b* and V.B.2.*c* fall under, *see id.* at 26-27. This lack of clarity is exacerbated by the brevity of the arguments themselves and the fact that Petitioner does not amplify its discussion of these issues in its later briefs. Furthermore, in discussing the cost estimates the Region allegedly failed to perform, the economic benefits analyses, and the noise impacts issue, Petitioner cites repeatedly to the Region's discussion in chapter IV of the Response to Comments document, which focused on the Region's CWA section 316(b) determinations. *See id.* Based on these factors, we will assume these arguments are raised solely in connection with section 316(b) and will discuss them when we address the issues related to that statutory provision *infra*, Part VI.B.4.

72 Petitioner asserts that open-cycle cooling has been BAT for power plants similar in size and age to BPS for thirty years. Petition at 24; DEBP Suppl. Br. at 6; DEBP Reply at 4.

73 In this case, the technology-based (BAT) limits were apparently more stringent than the WQSs. Thus, the section 301 determination was technology-based. However, at a site where the WQSs are more stringent than the technology-based BAT limits, the section 301 effluent limitations would be based on the WQSs. *See infra* Part VI.A.1.c. In such circumstances, the baseline effluent limitations established under section 301 may be substantively related to the section 316(a) standard because WQSs may be based on biological factors.

74 If, however, the Region had concluded that the variance limitations allowed a level of control less stringent than open-cycle cooling, Petitioner's challenge that BAT should have been open-cycle cooling would have been moot.

75 Petitioner has not challenged this determination.

76 The regulations provide some guidance for this case-by-case BPJ analysis, requiring consideration of "(i) the appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information; and (ii) any unique factors relating to the applicant." 40 C.F.R. § 125.3(c)(2); *accord NPDES Manual* at 70. Additionally, the regulations list certain factors that the permit writer must apply when using BPJ for setting BAT requirements. 40 C.F.R. § 125.3(d)(3); *accord NPDES Manual* at 70. These factors are identical to those listed in CWA section 304(b)(2)(B), which the Agency "take[s] into account in determining the best measures and practices available" when promulgating ELGs. 33 U.S.C. §

1314(b)(2)(B).

77 Among other things, the Region generally considered the basic types of c irculating water cooling systems potentially available - open-cycle (or once-through) cooling, once-through cooling with supplemental cooling, closed-cycle cooling, and a combination of these, such as partially shifting the facility to closed -cycle cooling (e.g., converting one or more of the four units at BPS to closed-cycle cooling). DPDD at 4-22 to-95. The Region also considered several types of cooling tower options (e.g., wet, dry, and hybrid).*See generally id.* The options the Region more closely consid ered included: partial closed-cycle cooling for Unit 3 alone, partial closed-cycle cooling for Units 1 or 2 and for Unit 3, closed -cycle cooling for the entire station, partial closed-cycle cooling using once-through cooling for Unit 4, and "enhanced multi-mode cooling," which utilized cooling towers that can operate in either closed-cycle, helper, or piggyback modes. DPDD at 4-39.

78 We note that the relevant comments were actually submitted by "PG&E-NEG." This entity, however, was apparently the owner of USGen. Although PG&E-NEG and USGen were, as a technical matter, separate, both corporate names were apparently included on materials submitted by the permitte e to EPA, and officials from both entities met with the Region. DPDD at 1 -1 n.1. To avoid confusion, we will consider any comments raised by PG&E -NEG and/or USGen as being "raised" by the current owner, Dominion, and refer to those comments as Petitioner's (or Dominion's) comments throughout the remainder of this decision.

79 Although it is not clear whether Petitioner specifically used the term "disparate treatment" in its comments, it did raise the same general concern in several of its comments on the Draft Permit. *See* RTC at VIII -1 to -11, cmts. 1 -4, 6-7. For example, one of Petitioner's comments stated that "EPA Region 1 has departed from its l ong-standing practice in the application of CWA § 301(b)(2) (requiring BAT for managing thermal discharges). " RTC at VIII-5, cmt. 5. Other comments in this section of the RTC also address comments regarding the alleged misapplication of the legal standard for determining BAT. *E.g., id.* at VIII-1, cmts. 1-2. We also observe that, in its response to that comment, the Region discusses several cases cited by Petitioner, including c ases cited by Petitioner in its appeal of this issue. *E.g., id.* at VIII-5 to-6 (discussing relevance of *Mass. Dep't of Educ. v. U.S. Dep't of Educ.*, 837 F.2d 536 (1st Cir. 1988)).

80 The Region's response to these comments was rather lengthy. *See* RTC at VIII-1 to-11,-14 to-16 (containing over fourteen pages of single-spaced responses printed in very small font). Rather than reiterating the Region's responses to these comments in their entirety, we will summarize the main points of the Region's analysis in the text that follows.

81 According to the legislative history, in making the determination of wh at is the "best available" technology in a category or class, "rather than establishing the range of levels in reference to the average of the best performers in an industrial category, th e range should, at a minimum, be established with reference to the *best performer* in any industrial category." 1972 Legislative History at 170. In its Determinations Document, the Region cited to several documents that contained examples of once-through power plants that had been retrofitted to closed-cycle cooling. DPDD at 4-32 to-33 & nn.104-105; *see also* A.R. 2183, 2326, 3002, 3082, 3328, 3330 (documents discussing power plants that have converted to closed-cycle cooling).

82 As we noted earlier, *see supra* note 16 and accompanying text, installation of Units 1, 2, and 3 predated the enactment of the CWA and thus their initial installation was not governed by the CWA. RTC at VIII-3; DPDD at 3-1.

83 The Region first indicated that the permit in question was based on a section 316(a) variance, not on a BAT determination, an d thus was not relevant to the BAT analysis for BPS. RTC at VIII-4. Next, the Region explained that closed-cycle cooling had been rejected for the other plant primarily because the reduction in thermal effluent would have adversely harmed a local populati on of manatees, a species protected under the Endange red Species Act ("ESA"), 16 U.S.C. §§ 1531 -1544. Because ESA-related issues were not at issue in Mt. Hope Bay, the situation and findings regarding the other plant were simply inapplicable to Brayton P oint. RTC at VIII-4.

84 As a threshold matter, we note that, while Petitioner's challenge to the Region's BAT determination does not appear to rest u pon its disagreement with the Region's conclusion that Brayton Point can be retrofitted to use mechanical draft cooling tower technology similar to that employed by other stations, if there were a factual disagreement between the Region and Petitioner over a technical issue, the Re gion's technical judgments and conclusions would be entitled to deference, as explained above *supra* Part IV. *E.g., In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001); *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 201 (EAB 2000); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998), *review denied sub nom.Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). Thus, our consideration of whether the Region clearly erred in its BAT determination would reflect such deference to the Region's technical expertise.

85 We also note that, in 1985, the Agency imposed limita tions that essentially required closed -cycle cooling for an electric utility

plant in Ohio in order to limit discharges by the facility (and thus to limit thermal impacts). *See United States v. Ohio Edison Co.*, 725 F. Supp. 928, 929-30 (N.D. Ohio 1989). The cooling tower, however, was never built, apparently as a result of the company's delayed construction of it as well as the Ohio EPA's unilateral decision to modify the permit. *See id.* at 930-31.This does not change the fact that the Agency did indeed require closed-cycle cooling as a condition of its approval.

86 While we agree with Petitioner that administrative consistency is important in the application of the CWA's technology standards, DEBP Suppl. Br. at 7, the technology-forcing aspect of the statutory scheme is even more important. *NRDC*, 859 F.2d 199-201; *NRDC*, 822 F.2d at 123.

87 We also note that although Petitioner, in its supplemental brief, alleges that the Region solely relied on other categories of point sources in its Determinations Document, DEBP Suppl. Br. at 7 n.7, the Region successfully demonstrates that this allegation is incorrect by citing to several documents in the administrative record that specifically discussed the retrofit of power plants similar to Petitioner's. *See, e.g.*, Region's Suppl. Resp. at 4 n.2 & Ex. A; *see also* RTC at VIII-14 to-16 (discussing other power plants that had undergone retrofitting and explaining why differences between those facilities and BPS did not change the Region's conclusion that a conversion was feasible at BPS). Even if it had relied on the use of technology in other point source categories, reliance on technology existing at a plant in a different industry in establishing the BAT has been found to be reasonable under the CWA. *E.g., Kennecott*, 780 F.2d at 453; *Reynolds Metal*, 760 F.2d at 562;*see also Am. Petroleum Inst. v. EPA*, 858 F.2d 261, 265 (5th Cir. 1988) (stating that under BAT, "a process is deemed 'available' even if it is not in use at all").

88 We also do not find the Region's conclusion that its BAT determination for BPS was not a break from prior practice clearly erroneous. Furthermore, even if its BAT determination for BPS was found to be "disparate," the Region has provided a detailed justification for its final case-by-case, BPJ BAT determination. Even if a court were to find BPS's treatment under section 301 to be "disparate," we believe the Region's explanation for its BAT decision would meet the standard required by courts - as articulated in those cases cited by Petitioner - where an agency has changed its course. *E.g., P.R. Sun Oil v. EPA*, 8 F.3d 73, 78-79 (1st Cir. 1993) (pointing out that a "'departure from prior norms' must be explained" (quoting *Atchison, Topeka & Santa Fe R.R. v. Wichita Bd. of Trade*, 412 U.S. 800, 808 (1973))); *Mass. Dep't of Educ. v. U.S. Dep't of Educ.*, 837 F.2d 536, 544-45 (1st Cir. 1988) ("[A]gencies 'have an obligation to render consistent opinions and to either follow, distinguish or overrule' their own earlier pronouncements."(quoting *Chisholm v. Def. Logistics Agency*, 656 F.2d 42, 47 (3d Cir. 1981)); *see also P.R. Aqueduct & Sewer Auth. v. EPA*, 35 F.3d 600, 607 (1st Cir. 1994).

89 The Region, in fact, hired two contractors to provide expert analyses in support of the Agency's own cost assessment - one to assess the "engineering aspects" of the estimated costs of several options under consideration and the other to assess "financial aspects" of the estimated costs of those options. DPDD at 4-66 to-67. These were compared to the cost and impact estimates that Petitioner had submitted. *Id.* at 4-62 to-95.

90 In contrast, the statutory standard for a BPT assessment - the formerly applicable section 301 statutory standard, *see supra* note 6 - explicitly requires a cost-benefit analysis. 33 U.S.C. § 1314(b)(1)(B) (requiring a "consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application "). In fact, the difference between the statutory language for these two standards is one of the primary reasons courts have concluded that no cost-benefit analysis is required for BAT. *Ass'n of Pac. Fisheries v. EPA*, 615 F.2d 794, 818 (9th Cir. 1980); *see also Nat'l Crushed Stone*, 449 U.S. at 70-71 & n.10; *Reynolds Metal*, 760 F.2d at 565.

91 In *Weyerhaeuser*, the court divided the BPT factors into two groups: (1) the factors that EPA must compare, i.e., the "comparison factors," which the court found to consist of two factors, the total cost versus the effluent; and (2) the group of factors EPA "must take into account," i.e., the "consideration factors." 590 F.2d at 1045.The court concluded that, unlike the BPT comparison factors, "Congress did not mandate any particular structure or weight for the many consideration factors. Rather, it left EPA with discretion to decide how to account for the consideration factors, and how much weight to give each factor."*Id.* Thus, by noting that all of the BAT factors are "consideration factors," the court implicitly suggests that EPA is not required to use any particular structure, such as a balancing test, in assessing the BAT factors (including costs), but instead has discretion to decide how to consider such factors and what weight to give them. *See id.*

92 This is, in fact, how the BPS permit is written. *See supra* Part III.A.

93 Petitioner further argues that the Region's "decision to treat [BPS] disparately was confirmed by the Region's communications with concerned state regulators, in which [the Region] clarified that it would not consider closed-cycle cooling [as] the starting point for thermal regulation in other pending cases in New England. "DEBP Suppl. Br. at 7-8. This argument is based on an extra-record e-mail between several employees of MA DEP. *Id.* at 8 & n.9. We have already ruled that this document be stricken

from the record on appeal. We note that even if we were to consider the e -mail, it would not support Petitioner's argument, as the e-mail does not say that the Region would not consider closed -cycle cooling as BAT. *See id.* Ex. A. Rather, the e -mail indicates that, although some of the cited plants have thermal issues (others apparently have issues under section 316(b), not 316(a)), the se other facilities do not have the habitat impacts that Brayton Point has. Thus, a section 316(a) variance for these facilities would not effectively require closed-cycle cooling technology.

94 Thus, for example, while the Region indicates that it had generally determined that "retrofitting existing power plants to closed-cycle cooling constitutes BAT for thermal effluent discharges from this category or class of point sources, " in the next sentence it points out that, for its individual permitting decision, "[it] went further * * * to assess whether this generally appropriate BAT would in fact be the BAT applicable to BPS, specifically in light of the facts of this case."RTC at VIII-7.

95 As we mentioned previously, Petitioner initially did not seek a section 316(a) variance when it submitted its 1998 NPDES perm it renewal application. *See supra* Part III.A; *see also* DPDD at 6 -1. When Petitioner submitted a completed variance request, it contained a proposed variance of 28 tBTUs, which Petitioner estimates will lead to a decrease in thermal impacts/discharges of approximately 33% from the current values. Petition at 4; DPDD at 6-14,-56.

96 Along these lines, Rhode Island also specifically disagrees with Petitioner's statement that "the effect of section 316(a) is to override application of absolute numeric water quality standards and fixed technology standards."RI Br. at 9 (citing Petition at 30). In support of its arguments, Rhode Island relies upon two cases: *PUD No. 1 v. Wash. Dep't of Ecology* , 511 U.S. 700 (1994), and *Northwest Envtl. Advocates v. City of Portland*, 56 F.3d 979 (9th Cir. 1995).

97 Insofar as Petitioner implies otherwise, such argument is misp laced. *See* DEBP Suppl. Br. at 8 (arguing that once *EPA* finds that the technology and water quality -based standards are more stringent than necessary to protect the BIP, "*[i]t* must then establish 'alternative effluent limits' at the level that a biological analysis determines are needed to protect the population"); DEBP Reply at 7 n.10 (seemingly arguing that it was inappropriate for EPA to require *Petitioner* to meet the statutory and regulatory standards in support of its proposed variance and instead placi ng the burden of proof on EPA). It may be true that (1) if an owner or operator demonstrates to EPA's satisfaction that otherwise applicable effluent limitations are too stringent, and then (2) the Agency rejects a discharger's proposed variance (for which , as discussed above, *the discharger has the burden of proof* to demonstrate that its proposal meets the standard), that (3) *if* the Agency then decides to issue a variance on its own initiative, the Agency will have to show that its variance decision meets the statutory standard. Petitioner appears either to have failed to recognize the second step or to have conflated steps two and three. Moreover, if the discharger's proposed variance does not meet the statutory and regula tory standard and the Region's doe s not either, then it seems to us that the permit's "default" effluent limitations must be based upon the technology-based and/or state WQS-based limitations.

98 Phytoplankton are "unicellular microscopic plants that are one of the most important sources of primary production for coastal and marine food webs"; thus, they are "important food items" for zooplankton (i.e., small aquatic animals) such as "larval fish, filter feeding invertebrates and some species of fish. "DPDD at 6-15. Changes in phytoplankton population dynamics "could very likely lead to significant impacts within the trophic dynamics of the food web."*Id.* at 6-23.

99 The data, however, do not extend back prior to the Station's operations. DPDD at 6-28.

100 It is interesting to note that the annual discharges of heat from BPS into the Bay also fluctuated throughout this period, pr obably based in part on several changes in the permit during this period. *See* DPDD at 6-29, tbl. 6.3-1; *see also id.* at 3-2 & n.1.

101 Ctenophores, or comb jellies, are "voracious plankton eaters and have been implicated in fish declines in the Black Sea. "DPDD at 6-24 (citing Sullivan study). This may be due to the fact that ctenophores feed on certain species of fish eggs and "compete with fish larvae for zooplankton prey. "*Id.* (citing Sullivan study)."Dramatic increases in [ctenophore] abundance are usuall y indicative of stressed systems."*Id.* (citing Pohl study).

102 In a later section of its Petition, Dominion appears to argue that the appropriate BIP measu rement would be the community of fish in *Narragansett* Bay. Petition at 42. Although Petitioner's precise position on this issue is unclear and may, in fact, have changed over the course of this proceeding, we need not resolve the question of location now (i.e., whether Petitioner is arguing in favor of the Mount Hope Bay or the Narragansett Bay fish community). We consider the general temporal issue here, i.e., whether the Region erred as a legal matter in not considering the *current* communities of fish as the BIP, and our analysis would apply to either location.

103 The regulations actually define the term "balanced, indigenous community." 40 C.F.R. § 125.71(c). As mentioned above, *see supra*

note 12, the regulations state that this term is synonymous with "BIP." *Id.*

104 Petitioner's interpretation of the BIP as encompassing those organisms currently occupying Narragansett Bay, *see supra* note 102, would similarly be inconsistent.

105 As we discussed in the previous section, on page 28 of its Petition, Dominion seems to suggest that the appropriate populatio n of organisms to be considered is the one "currently occupying Mount Hope Bay. " Petition at 28. In co ntrast, Petitioner appears to argue on page 42 that the appropriate BIP measurement would be the community of fish in *Narragansett* Bay. *Id.* at 42.

106 In this second argument, Petitioner does not specify whether it is referring to the present Narragansett Bay fish community or some past community of fish. Petition at 42. Petitioner's reference to "long-term data" suggests that it may be referring to a past community. *Id.* Reading Petitioner's comments consistently with its comments on the Draft Permit - where it argued that the appropriate BIP baseline "is the population that exists *today* 'next door' in Narranganset Bay," BPS Comments on Draft Permit at 50 (emphasis added) - would lead us, however, to interpret its argument on pages 42 to 43 to refer to current populations of fish. Because Petitioner, in its comments on the Draft Permit, did not raise the issue of whether some past Narragansett Bay commun ity of fish should be used to establish the BIP, any argument that the Region erred in not considering a past Narragansett Bay community of fish as the BIP would be procedurally barred on appeal. *See supra* Part IV. Furthermore, insofar as Petitioner is arguing that the Region should have solely considered the current fish community in Narragansett Bay, we have already address ed that issue as well. *See supra* Part VI.A.2.b.ii.*a*. Nonetheless, we do touch upon the issue again in considering Petitioner's claim of inconsistent statements.

107 Notably, Petitioner does not cite to anywhere in the administrative record where the Region made such a statement.

108 The Region did apparently rely to so me extent on data from Narragansett Bay in determining the BIP. RTC at III -6 (stating that while "fishery data from Narragansett Bay provide one interesting reference point, [it is] by no means the only one for assessing the plant's effects on the BIP in Mount Hope Bay").

109 We do not find inconsistent the Region's position that BPS has some impact on Narragansett Bay, RTC at III -6, and the Region's position that there have been differential declines in fish stocks between Mount Hope Bay and Narragansett Bay to which BPS has likely contributed, *id.* at VII-24. It does not seem illogical that BPS would have greater impacts on Mount Hope Bay, the water body upon which it is situated and from which it withdraws water and into which it discharges its thermal effluent.

110 We note that failure to explain the inadequ acy of the responses to comments can be the basis for rejecting a petition for review. *E.g., In re Teck Cominco Alaska Inc.* , NPDES Appeal No. 03 -09, slip op. at 51 -52 (EAB June 15, 2004); *In re Avon Cust om Mixing Servs., Inc.*, 10 E.A.D. 700, 708 (EAB 2002); *In re Westborough*, 10 E.A.D. 297, 311-12 (2002).

111 In its Petition and later briefs, Petitioner also raises concerns about the application of state WQSs on the Region's *final* variance. *See* Petition at 28; DEBP Suppl. Br . at 9, 20 -22. Several times while discussing the Region's rejection of Petitioner's proposal, Petitioner generally challenges the Region's "variance decision " or the Region's "so-called variance. " Petition at 28. These references seem to implicate the fin al variance the Region granted, not the proposed variance the Region rejected. In Part VI.A.3.b.iii of this opinion, we will address the issue of the applicability of WQSs on the final variance. In addition, in this sec tion of its Petition, Petit ioner cites to an extra -record document in support of its assertion that the Region's "so-called variance" is essentially a restatement of water quality requirements in the form of a variance. *See* Petition at 28 (citing an undated "MA DEP Memorandum"). We have declined to supplement the administrative record with this document, *see supra* Part V.A.3. d, and therefore do not consider this portion of Petitioner's argument further.

112 These pages are inclusive of the pages Petitioner cites as the relevant ones in its Petition. *See* Petition at 47-48 (citing "AR# 3263, Vol. I at 47-50" and "AR# 3263, Vol. I at 46-47 and n.86").

113 Petitioner did, however, raise concerns about the impact of a section 316(a) variance on a state's CWA section 401 certificat ion and on a downstream state's (i.e., Rhode Island's) "veto" power. *See* BPS Comments on Draft Permit at 47 n.86. This is not the same issue raised here on appeal.

114 Furthermore, we note that many of Petitio ner's assertions on this issue are merely conclusory and do not point to anything in the record that actually demonstrates (or even suggests) that the Region relied upon state WQSs in rejecting Petitioner's varianc e proposal. *See generally* Petition at 27 -28. For example, Petitioner states that although it pointed out a decision by the EPA's General Counsel "establishing the legal standard for granting variances and the effect of variances on otherwise -applicable

standards, including water quality standards, AR# 3263, Vol. I at 47-50, Region I disregard[ed] those decisions. Instead, Region I impose[d] a novel and excessively stringent burden of proof on the Permittee and [sought] to justify it by misinterpreting the role of water quality standards in the variance process."*Id.* Although Petitioner cites to comments it made on the Draft Permit (i.e., A.R. 3263), Petitioner does not point to an administrative record document *prepared by the Region* that provides any evidence that the Region relied on state WQSs in considering and rejecting Petitioner's proposed section 316(a) variance. In particular, Petitioner does not cite to the Region's Determinations Document where evidence of the Region's reliance on state WQSs in rejecting Petitioner's proposed variance - if it so occurred - would be expected to be found. The only administrative record documents to which Petitioner does specifically refer, besides its own submissions to the record, are citations to two pages in the Response to Comments document: at V-4 and III-3. Petition at 28 ("With no more than a vague statement of 'disagreement' with prior decisions of EPA on this point, Response at V-4, Region I relies on water quality standards to justify its variance decision. Response at III-3."). Upon reviewing these two pages of the Response to Comments document, however, we cannot find any suggestion that the Region relied on state WQSs in rejecting Petitioner's variance proposal. The discussion on page V-4 of the Response to Comments document addresses the question of whether a state could withhold its CWA § 401 certification if alternative effluent limitations are developed under § 316(a), not whether the Region relied on either states' WQSs in its consideration of Petitioner's variance proposal. *See* RTC at V-4. As no state withheld certification on this Permit, the point not only is irrelevant to Petitioner's current argument, it is essentially moot. As for Petitioner's reference to the discussion on page III-3, although it is at least closer to the issue Petitioner raises here on appeal, we cannot find any statement on the page that supports Petitioner's contention that the Region relied on state WQSs to reject its variance. *See* RTC at III-3. Without further explanation, citation, or analysis by Petitioner, we do not find any support for Petitioner's argument and will not scour the record to find documents that support it. *In re Phelps Dodge Co.*, 10 E.A.D. 460, 507 n.39 (EAB 2002) ("It is not our duty in an adversarial proceeding to comb the record and make a party's argument for it.").

115 See *infra* Part VI.A.3.b.iii, where Petitioner appears to have made contrary statements regarding the use of state WQSs in its comments on the Draft Permit.

116 The Region, in fact, specifically addressed a similar comment in its Response to Comments document. The Region noted that:
Unreasonably delaying recovery is arguably inconsistent with the notion of assuring the protection and propagation of the BIP. * * * In any event, this issue is *not* presented by this case. EPA did not reject the alternative limits proposed by the permittee on the grounds that they would allow, but unreasonably delay, the recovery of the BIP. EPA rejected the permittee's proposed limits because, as stated above, the Agency concluded that the permittee's past thermal discharges have caused appreciable harm to the BIP, and its proposed future discharge would not assure the protection and propagation of the BIP. The latter conclusion is based on a number of factors, only one of which is EPA's conclusion that the permittee's proposal would *prevent* (not merely delay) the recovery of the BIP.
RTC at III-7 (internal citations omitted). We observe that Petitioner has not, on appeal, explained, as it is obligated to do, why this response is clearly erroneous.

117 The Region actually stated that "EPA's goal for permit limits to control thermal discharges is to reasonably assure the protection and propagation of the BIP in and on Mount Hope Bay. EPA expects, however, that achieving this goal will also help to allow the recovery of the fishery. EPA has concluded that the deterioration of the Mount Hope Bay fishery is the result of a combination of factors including the power plant's cooling system (i.e., thermal discharges to and water withdrawals from the bay) *and* overfishing. * * * All these factors must be addressed. This permit will address the power plant."RTC at III-42.

118 We note that the word "measurable" is a synonym for "appreciable." *See* The Doubleday Roget's Thesaurus in Dictionary Form 31 (Sidney I. Landau & Ronald J. Bogus, eds., 1977). "Appreciable harm" is, of course, part of the EPA's standard for demonstrating that a variance is appropriate. *See*40 C.F.R. § 125.73(c).

119 The regulations explicitly require that, in order to demonstrate the absence of appreciable harm and thus qualify for a variance, an existing discharger show "that no appreciable harm has resulted from the normal component of the discharge[,] taking into account the interaction of such thermal component with other pollutants and the additive effect of other thermal sources to [the BIP] * * *."40 C.F.R. § 125.73(c)(1)(i). It is unclear to us how an existing discharger can meet this standard if there is evidence that it has contributed to the failure to maintain the BIP.

120 In its Petition, Dominion also contends that the administrative record suggests that "the real purpose of the 1.7 tBTU limit was to allow 122 hours of open-cycle cooling to protect the Braga Bridge and highway from dangerous fog and ice attributable to the cooling towers."Petition at 30 n.28. Petitioner does not explain its contention further. The Region responds to this by asserting that the allegations are incorrect and unsubstantiated. Response at 77 n.55. The Region further argues that it addressed this contention in the Response to Comments document, and that Petitioner has merely repeated its previous comment without demonstrating any

errors in the Region's response. *Id.* Petitioner does not respond to the Region's arguments, nor does it repeat or articulate further this particular argument in later briefs.
Upon consideration of the Response to Comments document, we find that the Region did respond to Petitioner's contention and that Petitioner has failed to explain why the Region's responses to its comments were erroneous. Moreover, Petitioner has failed to even provide sufficient explanation in its appeal regarding this issue. Consequently, we find this argument to be procedurally defective and, accordingly, will not consider it further.*See, e.g., In re Phelps Dodge Corp.*, 10 E.A.D. 460, 507-09 (EAB 2002); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 668 (EAB 2001); *In re Envotech, L.P.*, 6 E.A.D. 260, 268 (EAB 1996).

121 Petitioner additionally notes that Massachusetts has allegedly indicated that some of the values used by the Region are not biologically justified. Petition at 30 (citing a letter that appears to be extra-record material).

122 In connection with this argument, Petitioner submits a 72-page table of "biological errors" that the Region allegedly made in its responses to the commenters. *See* Petition at 29 n.27 & tbl.

123 Specifically, Petitioner alleges that the Region's "sole answer" to its myriad list of criticisms was a one-sentence statement in the Response to Comments document. *Id.* (quoting RTC at III-29).

124 Petitioner claims that, in fact, the eelgrass disappeared from Mount Hope Bay in the 1930s, decades prior to the construction of BPS, and that there is no evidence that it would be alive but for BPS. Petition at 44. Thus, according to Petitioner, the Region lacked any support in suggesting that the variance proposed in the permit will allow restoration of eelgrass in Mount Hope Bay but that Petitioner's proposed variance would not. *Id.*

125 Although Dominion, in its Petition, raises this WQS argument in connection with its arguments concerning the Region's rejection of Petitioner's proposed variance, it appears from Petitioner's subsequent briefs that the argument is also associated with Petitioner's challenge to the Region's variance. *Compare* Petition at 27 *with* DEBP Suppl. Br. at 20-22; *see also* DEBP Reply at 10. Thus, although we briefly addressed this issue in connection with Petitioner's claims regarding its variance proposal, *see* Part VI.A.2.b.ii.*c*, we have placed the majority of our discussion concerning this issue in this part of our decision.

126 The Region also reemphasizes that, with respect to *Petitioner's* variance proposal, Petitioner had the burden of proof to demonstrate its proposed variance would assure the protection and propagation of the BIP. Response at 75.

127 On appeal, we review the Region's conclusions in this regard under a "clear error" standard of review. 40 C.F.R. § 124.19(a); *In re Inter-Power of N.Y., Inc.*, 5 E.A.D. 130, 144 (EAB 1994); *see also supra* Part IV.

128 According to MA DEP, had the EPA used the mixing zone in establishing the variance limits, the result would have led to no permissible thermal discharge at certain times, a condition not contained in the Permit. *See* MA Suppl. Br. at 14; *see also* MA Br. at 4 n.5.

129 At oral argument, CLF's position on this point was more equivocal than in its briefs. While discussing the section 316(a) issue at oral argument, CLF stated that "the permit represents the bare minimum necessary to achieve compliance with the Act," Oral Arg. Tr. at 96, but later stated that "it's questionable whether the permit goes far enough to comply with the Act, "*id.* at 97-98.Finally, CLF summarized its position on this issue by stating that "[i]t's clear the EPA could have reasonably made the permit more stringent."*Id.* at 98.None of these statements vociferously challenges the permit as written; in fact, at least some of them could be read to suggest that CLF was no longer challenging the permit's conditions as too lax.

130 CLF asserts that the variance would cause a violation of Rhode Island's numeric water quality criteria and also states that it would violate Massachusetts' WQSs. CLF Br. at 10, 12. At oral argument, however, CLF was more ambiguous about its position on this issue. There CLF stated that although Rhode Island had "note[d] that there is violation of water quality standards, which we think is significant because it shows [Rhode Island] could have been more stringent, " in the end, Rhode Island had "conclude[d] that in general they comply."Oral Arg. Tr. at 100.

131 To assist in this analysis, the Petitioner was asked to develop a predictive hydrothermal model of the thermal plume dynamics in Mount Hope Bay, which it did. DPDD at 6-30.

132 We note that our discussion of the Region's analysis is a simplified version of the actual analysis. In particular, our discussion focuses on the portions of the analysis that are relevant to the issues raised in the Petition.

133 "Summer" is the temporal period between July 15 and August 15, which is the warmest time of the year. DPDD at 6-30.

134 The benthic layer in this case is the bottom layer of an 11-layer hydrothermal model developed by Petitioner. DPDD at 6-32.

135 The pelagic layer in this case consists of the top ten layers in Petitioner's hydrothermal model. DPDD at 6-32.

136 "Winter" is the temporal period between March 1 and March 31, whic h "corresponds with winter flounder spawning activity and with large numbers of larval planktonic winter flounder being present in the water column."DPDD at 6-30.

137 Petitioner claims that the Region erroneously "analyzed only two species and based its permit limits on only one: winter flounder."DEBP Suppl. Br. at 10 & n.10. Petitioner fails to acknowledge that, although the Region selected each of its fina l temperature threshold endpoints on the most sensitive species, the Region actually analyzed the thermal tolerances of at leas t 15 species of fish. *See* DPDD at 6-31.

138 For example, the Region explained that the flounder data indicated sublethal effects beginning with temperatures in the low 2 0s (e.g., burrowing, decreased feeding), and avoidance of the area by flounder by 24 to 25 °C. DPDD at 6 -34; RTC at III -11. Apparently, mortality of flounder begins at a higher temperature. Region Suppl. Br. at 18 -19 (citing Ex. 66); DEBP Suppl Br., Ex. C at 179. The Region did not select as the critical threshold temperature a "no effects" level (essentially below 20 °C), nor did it select a temperature at which all flounder die; instead, it selected what it called a "reasonable, but protective" value. DPDD at 6-36. As the Region explained, 24 °C "clearly is in excess of a no -effects level, but the e cological impact of increased burrowing and decreased feeding is difficult to determine. However, avoidance of an area clearly is in conflict with EPA's duty to assure t he protection and propagation of the balanced, indigenous population of Mount Hope Bay."RTC at III-11.
From the record, it appears that Petitioner tended to take the opposite approach.*See, e.g.*, DPDD at 6-32; RTC at III-11. The Region noted that the permittee "preferred to focus on the point at which 100 percent of the population would demon strate an effect," while the Brayton Point Technical Advisory Committee - a group of biologists from the regulatory agencies that have responsibilities associated with the aquatic community in Mount Hope Bay - recommended a "no-effects level," and the Regi on itself selected a middle position. RTC at III -11; *see also* DPDD at 6 -32 to -33 (noting that Petitioner "did not choose the first temperature, where the researchers first noted thermal effects, or the second temperature, where those effects became more pronounced; it chose a temperature that occurred past the pronounced effects, yet before feeding and swimming was completely eliminated, as the optimal temperature"). These different approaches regarding the selection of an appropriate temperature appear to be at the heart of the different interpretations that Petitioner and the Region have on the scientific studies at issue.

139 Thus, even Hypothetical A, the most stringent of the scenarios (besides the "No Plant" scenario), which appears to allow discharges greater than those in the Final Permit, would have led to 36 percent of the bottom water volume exceeding 24°C for five days or more. DPDD at 6 -39. According to the model, Petitioner's proposed variance would result in "over half the bottom water of the bay [being] avoid[ed] by juvenile winter flounder for greater than 5 days (out of 30 days), and 80% of the bay would experience some level of impairment."*Id.*

140 For Hypothetical A, "less than 1% of the middle water volume exceeded 25°C for 5 days or greater."DPDD at 6-40. For the middle water column, only thr ee percent "experienced degradation of a duration less than 5 days and 96% of the middle water volume never exceeded 25°C."*Id.*

141 Petitioner occasionally in its briefs also appears to generally challenge the selection of all four temperature thresholds. *See, e.g.*, Petition at 31 (explaining that the permittee and others had commented that "the temperature thresholds" selected by the Region were arbitrary). In addition, in several places, Petitioner generally challenges the selection of both the 24 °C and the 5 °C threshold values. *See* Petition at 30-31. Petitioner also states that it "does not concede that the Region has properly consid ered the effects of [BPS] on striped bass," which was the most sensitive summer pelagic species and led to the selection of the 25 °C summer temperature threshold for the pelagic layer. DEBP Suppl. Br. at 10 n.11. In its appeal briefs, however, Petitioner f ails to provide any particularized challenges to any of the other temperature threshold values other than the 24 °C value. Consequently, all of its particularized argument is focused solely on the 24 °C C selection. *See* Petition at 31 -32; DEBP Suppl. Br. at 12-20; Reply at 9. Accordingly, because this is the only temperature value for which there is any particularized argument, we focus predominantl y on that value and the arguments made with respect to it. Where we make generalized findings about the manner i n which the Region calculated the temperature thresholds, these generalized findings also apply to the other temperature threshold values.

142 The dispute over the Casterlin and Reynolds study exemplifies this fact. The primary figure at issue, which illustrates floun der temperature preferences, roughly resembles a distribution curve (i.e., a "bell curve").*See* DEBP Suppl. Br., Ex. C at 178, fig. 1. To

use this laboratory study to select a critical threshold temperature for winter flounder in Mount Hope Bay clearly requires scientific judgment as to what is the most appropriate cutoff point on the downside of the distribution curve. Petitioner and the Region take different positions as to where along that downward curve the critical point should be.

143 These include: a study by Reitsma (2002) submitted by RI DEM, a study by Olla (1969), the Duffy and Lüder (1978) study, the Casterlin and Reynolds (1982) study, and a personal communication from Dr. Grace Klein-MacPhee to MA DEP (2002).

144 Although not mentioning the Klein-MacPhee statements in this section of its brief, Petitioner does mention them several pages later, in support of its arguments that the temperature selected should have been 25°C or above. *See* DEBP Suppl. Br. at 20 n.43.

145 B.L. Olla et al., *Behavior of winter flounder in a natural environment*, 4 Trans. Amer. Fish. Soc. 717 (1969).

146 In addition, according to Dr. Klein-MacPhee's statement itself, which is part of the administrative record and which Petitioner attached to its supplemental brief, "feeding inhibition and *avoidance behavior are evident at 24 °-27°C*."DEBP Suppl. Br., Ex. D (emphasis added). Accordingly, she recommends "*25°C* as a temperature which *should not be exceeded* for juveniles." *Id.* (emphasis added). Contrary to Petitioner's later suggestion, *see* DEBP Suppl. Br. at 20 n.43, Dr. Klein-MacPhee's statement does not clearly contradict the Region's conclusion that 24 °C is an appropriate temperature. Her statement merely suggests that any temperatures *above 25 °C* would be inappropriate, not that temperatures below 25 °C would necessarily be. Given the finding of effects in the range of 24°-27°C, there is clearly room for technical judgment in setting the limit.

147 Thus, Petitioner's claim that the Region provided only a one-sentence response to its comments concerning the 24 °C cutoff value, DEBP Suppl. Br. at 17, is misleading. While the Region's response to one particular comment discussed on page III-29 of the Response to Comments document is only one sentence long, as we state in the text above, the Region does discuss the selection of 24°C several times in chapter III of the document.

148 In particular, the Region's responses to the Casterlin and Reynolds and the Duffy and Lüders studies were briefer than the comments. Additionally, as we note below, *see infra* note 150, the Region did not specifically address comments concerning the RI DEM study.

149 In particular, we find that the Region duly considered the issues raised in the comments regarding the Casterlin and Reynolds study. For a further discussion of these issues, *see infra* note 151. Moreover, we conclude below that the comments on the Casterlin and Reynolds study did not merit more than a generalized response, which the Region provided. We also find that, with respect to the Duffy and Lüders study, the Region, at a minimum, duly considered the issues raised in the comments with respect to one of the temperature values in the study upon which the Region relied (i.e., the 24.4 °C value) to support its 24 °C threshold temperature selection. We address this latter point below.

The Duffy and Lüders study consists of two sets of data: (1) a compilation of fish abundance measurements at numerous stations in Mount Hope Bay for 47 species of fish as well as estimates of temperature preference and avoidance response based on that data, and (2) a graphical representation of the results of several winter flounder laboratory studies, including winter flounder temperature avoidance studies. *See* A.R. 3209, Ex. 66 (John J. Duffy & Gerd Lüders, *Estimation of Finfish Temperature Preference and Avoidance in Mount Hope Bay* 1-2, 2-3 (Dec. 1978)) [hereinafter Duffy & Lüders (1978)]. The Region apparently relied on both portions of the study. *See* DPDD at 6-34 (indicating Region was relying on laboratory data in study); RTC at III-29 (citing to portion of study that considered actual data from Mount Hope Bay). In its briefs, Petitioner appears to have only challenged the Region's reliance on the second set of data, the graphical representation of the winter flounder temperature avoidance studies. *See* DEBP Suppl. Br. at 15 (citing Duffy & Lüders (1978) at D-30 (showing figure D-29, entitled "Winter Flounder Temperature Sensitivity Estimates")). We therefore solely focus on the arguments over the second data set.

Petitioner challenges the applicability of two of the studies the Region relied on from the second data set - the ones yielding the lowest temperature avoidance values (i.e., 24.2 and 24.4 °C) - to the circumstances in Mount Hope Bay. *Id.*; DEBP Reply Br. at 9. Petitioner's arguments concerning one of these temperatures (24.4 °C) is based on the concept of acclimation, whereas its arguments about the other temperature (24.2 °C) raises the issue of migration of the greater-than-one-year-old fish. DEBP Suppl. Br. at 15. Similar arguments about the scientific basis for relying on these temperature values were raised in comments on the Draft Permit. *See* A.R. 3263, Ex. 33, vol. II, tab 11 at I-6 (LMS, *Response to EPA MA0003654 Determinations* (Oct. 2002)) [hereinafter LMS Comments]. Upon review of the record, it is clear that the Region at a minimum "duly considered" the issues raised by the comments concerning the 24.4°C temperature.

While it is true that, in its Response to Comments document, the Region did not provide a detailed rebuttal specifically regarding this particular study, instead merely disagreeing as a scientific matter with Petitioner's interpretation of the study, *see* RTC at III-29; *see also id.* at III-11, the Region did discuss the issue of acclimation and its differences of opinion with Petitioner over this issue and its applicability to various studies. In fact, the Region addressed this general issue numerous times in its Response to

Comments document as well as in its Determinations Document. *See, e.g.*, RTC at III-10,-12,-24,-25; DPDD at 6-34 to-35. Thus, we find that the Region did duly consider and respond suffici ently to comments relating to acclimation, including those relating to the 24.4°C value.

We do not similarly find that the Region addressed the issues underlying the challenge to the 24.2 °C value. However, even if we were to find that the Region did not respond to comments on Duffy & Lüders' 24.2°C value, this would not be fatal to the Region's reliance on this study to support a 24 °C threshold temperature value because the Region did adequ ately respond to comments on the other value (i.e., the 24.4°C value) that supported its determination.

150 The one study for which Petitioner challenges the Region's interpretation and reliance upon, and for which we cannot find that the Region provided specific responses to any of the comments raised, is the RI DEM study. *See* DEBP Suppl. Br. at 14; *see also* BPS Comments on Draft Permit attach. 4, at 15; LM S Comments at I-5; DeAlteris 2002 Analysis. The Region did mention Petitioner's comment on the RI DEM study in its summary of several comments regarding the 24°C temperature selection. RTC at III-27 to-28. In its response to this set of comments, although ge nerally responding to all the 24 °C comments, the Region did not specifically discuss the challenges raised regarding the RI DEM study. Furthermore, the Region does not appear to have addressed Dr. DeAlteris's recalculation and reconsideration of the RI DEM data (in particular, his analysis of all 18 stations sampled by RI DEM as opposed to only two stations that were mentioned by the Region), comments Petitioner points to in its appeal. *See* DEBP Suppl. Br. at 14 n.24 (citing DeAlteris 2002 Analysis); *see also id.* at 17 n.34 (citing LMS comments at I-5).

Commenters (including Petitioner) raised several substantive concerns about this study. Like many of the studies, however, th e RI DEM study does not provide a precise cutoff point and therefore requires scienti fic judgment regarding its significance. The fact that there is no precise cutoff point is evidenced by the participants' statements and our own review of the referenced figur e. According to the Region, the study shows dramatic responses to water temperature by the flounder, with abundance dropping off to nearly zero "above 24 or 25°C." DPDD at 6-34. According to MA DEP, the study shows that "flounder vacated habitats when the temperature reached between 24 and 25°C."DPDD, Ex. A at 21. According to Petitioner, the study shows avoidance "near or above 25°C." DEBP Suppl. Br. at 14. An examination of the figure representing the data reveals the difficulty in selecting an exact value and accounts for the varied interpretations of the data. The figure shows a lar ge quantity of fish at the sampling station on one date and at one temperature. DPDD fig. 6.3 -3. The temperature appears to be around 24 °C (or probably just below it based on the participants' statements); the specific temperature, however, is not actually demarcated on the figure. *See id.* Fifteen days later, when the temperature is higher, there is a sharp dropoff (to zero) of fish abundance at this location. *Id.* In light of the participants' statements, the temperature on this second date appears to be aro und the 25°C mark, but this temperature, too, is not demarcated. Thus, looking at the figure it is difficult to tell at what precise temperature the fish may have "left" or "avoided" the sampling location. Despite this ambiguity, in light of Petitioner's o wn interpretation that the study shows avoidance by flounder "near or above 25 °C," thereby encompassing temperatures somewhat *below* 25°C, it does not seem irrational for the Region, as a substantive matter, to have relied on this study for the selection of 24°C.

Petitioner also claims that the Region used data from only two of eighteen stations, and that a consideration of all plots "shows no correlation between particular temperatures and decreasing numbers."DEBP Suppl. Br. at 14. However, in light of the Region's conservative approach, which we find technically supportable, it is not surprising that it emphasized the plots containing da ta showing the lowest temperatures at which the fish appear to avoid. Furthermore, the study cited by Petitioner states that, although for many of the stations abundance of winter flounder increased even as the temperature rose above 24 or 25 °, for three stations, the abundance of winter flounder declined "as water temperature approached or rose above 24°C."DeAlteris 2002 Analysis at 3.

151 As we mentioned in a previous footnote, *see supra* note 142, the debate over this study appears to be due to a scientific disagreement over precisely where the appropriate cutoff point should be on the downside of a distribution curve of "temperature preferences" of winter flounder. The 1982 Casterlin and Reynolds study was a study in which winter flounder were essentially allowed to voluntarily select their surrounding water temperature over the course of three days while their "temperature preferences" were monitored. DEBP Suppl. Br. at 14; *see also id.* , Ex. C (Martha E. Cas terlin & William W. Reynolds, *Thermoregulatory Behavior and Diel Activity of Yearling Winter Flounder, Pseudopleuronectes americanus* , 7 Env. Biol. Fish. 177 (1982)). The resulting distribution (or bell) curve shows that fish voluntarily selected temperatur es ranging from 8 to 27 °C during the course of the study, with the downside of the high temperature end of the curve beginning at or before 21 °C. DEBP Suppl. Br., Ex. C at 178, fig. 1. Fish apparently selected temperatures of 24, 25, and 26 °C for about 4 -5% of the time and a temperature of 27°C for about 3% of the time. *Id.*

Although the Region relied on this study in selecting a critical temperature threshold value of 24°C, Petitioner argues that the study does not support the Region's selection. While it i s true, as Petitioner argues, that the fish in the study were sometimes found in temperatures above 24°C (approximately 12.5% of the time), it is also true that the great majority of the time the winter flounder selected temperatures less than 24 °C.*See id.* As we noted previously, to use this laboratory study to select a critical threshold temperature for winter flounder in Mount Hope Bay necessarily requires scientific judgment as to what the most appropriate cu toff point on the downside of the distribution curve should be. Such final selection would also depend on the level of conservativeness in the approach. Significantly, although the authors do state that "avoidance responses are initiated at or below 27°C," as quoted by

Petitioner, DEBP Suppl. Br. at 14 , the authors also state that the final temperature "preferendum" was at 18 -19°C and that "sublethal effects such as inhibition of feeding occur" between 20 and 29°C, *id.*, Ex. C, at 179. The authors' statements (as well as the study results) are rather amb iguous in that they contain ranges of values and therefore do not point to an absolutely definitive temperature threshold value, much as Petitioner would try to imply otherwise. Accordingly, we disagree with Petitioner's suggestion that this study necessar ily supports a higher threshold than 24 °C and cannot support a selection of 24 °C. This is especially true in light of the Region's statements that it took a protective approach. *See supra* note 138 and accompanying text.

152 This is true even if we do not consider the RI DEM study and/or the Duffy and Lüders study.

153 Sublethal and other effects apparently occur between 20 and 29 °C according to the studies discussed above. The Region, although discussing effects such as increased burrowing and feeding inhibiti on temperature, primarily relied on avoidance temperature data rather than data on sublethal effects, however, in selecting a threshold temperature. RTC at III-11; DPDD at 6-37. The decision not to rely on sublethal effects was not challenged on appeal, ho wever, so we will not consider whether or not this was clearly erroroneous.

154 This issue was not raised in the comments on the Draft Permit or in the Pet ition and thus, if it was "reasonably ascertainable" by the close of the comment period, it would normally be procedurally barred. *See*40 C.F.R. §§ 124.13 , .19(a); *see also* discussion *infra* Parts IV, VI.A.3.b.iii. Here, however, because Petitioner alleges that it only ascertained the issue after the Region explained the significance of the map in its supplemental brief, DEBP Suppl. Br. at 8, a time period well beyond the close of the comme nt period, and because such an explanation appears credible in light of the circumstances in this case, we will consider the iss ue on appeal.

155 The full caption below the figure reads: "Revised from: Assessment of 20 Northeast Groundfish Stocks through 2001, A Report of the Groundfish Assessment Review Meeting (GARM), Northeast Fisheries Science Center, Woods Hole, Massachusetts, October 8-11, 2002."Region Suppl. Resp., Ex D.

156 The 1998 version appears to be a map delineating areas where seine stations for young flounder were located in Mount Hope Bay. *See* A.R. 415, at F.158. The actual report is dated September 1999. *Id.*

157 This map was not related to either the 2002 map or the 1998 map.

158 The MRI seine survey is part of the BPS 1998 Annual Report, which was published in 1999. *See* A.R. 415, at F.158 to F.192. The survey describes the number of young winter flounder captured at various locations around Mount Hope Bay, primarily in the rivers that discharge into the Bay, from 1992 to 1998. *Id.* at F.158. The number of sampling stations fluctuated each year, ranging from 10 to 21 sites. *Id.* These sites are depicted on Figure F-46, which is the original version of the map at issue in this case. *Id.* at F.165. Besides containing this map, this study contained much detailed information about the location and abundance of young winter flounder in the tributaries of Mount Hope Bay. *See generally id.* at F.158 to F.186.

159 The Region states that "[h]ydrothermal modeling predicts that the majority of areas known as winter flounder nursery habitat will be spared the influence of the thermal plume" with these permit limits. RTC at III-31.

160 In its supplemental brief, the Region provides a similar summary of the administrative record to the one we have presented above but then states that it "plotted on a map the maximum area a thermal plume from BPS could occupy while still avoiding the majority of key identified nursery habitat areas. This area covered only approximately 10 percent of Mt. Hope Bay."Region Suppl. Br. at 14-15 (citing RTC, fig. 13) (other internal citations omitted). The map the Region mentions is the 2002 map at issue here. As we state in the text, the above -quoted explanation, which the Region provided in its brief, is not clearly explicated in the administrative record.

161 While it is true that five days was one of the values used by Petitioner in the modeling runs it performed to provide informa tion to the Region, this alone does not justify why the Region ultimately selected five days in deriving the conditions of the Final Permit.

162 Petitioner makes a similar, but more detailed and forceful argument with respect to the impact of these studies on the Region 's section 316(b) determinations. *See* DEBP Suppl. Br. at 12 n.15 (citing to Parts II.B and III of its briefs, the portions focusing on section 316(b) issues); *see also id.* at 28-31.

163 We find it ironic that, although Petitioner asserts in this same section of its brief that the Region may not consider inform ation prepared after the issuance of its Draft Permit, it now claims that the Region should have considered this dra ft study that only

became available after the Draft Permit was issued.

164 One of the alleged "uncorrected errors" concerns calculations made under section 316(b). We consider that issue (the Region's production foregone calculations) below, *see infra* Part VI.B.4.b.iii.*c*(5).

165 For example, in its Determinations Document, the Region stated that eelgrass began dying off in Mount Hope Bay in the 1930s. DPDD at 6 -25. The Region further stated that "numerous eelgrass restoration efforts are being or have been attempted around Narragansett Bay," and that "the combination of warm water temperatures and low water clarity may prevent its reestablishment " in Mount Hope Bay, essentially forming an exclusion zone in the Bay. *Id.* The Region further noted that BPS's discharge, "which elevates the temperature over significant portions of the bay, contributes to this exclusion zone. "*Id.* at 6-26.In its comments on the Draft Permit, Petitioner challenged the Region's statements, raising the concerns it now raises on appeal as well as suggesti ng that poor water quality is the sole reason for eelgrass exclusion in Mount Hope Bay. *See* RTC at III -20. The Region addressed these concerns in its response, reiterating its position that BPS's thermal discharges "alone or in combination with poor water clarity" are the reason or reasons that Mount Hope Bay is an unsuitable habitat for eelgrass. *Id.* The Region cited to and summarized various studies indicating that elevated temperatures have a negative impact on eelgrass growth and survival. *Id.* at III -20 to -21. Of particular note, the Region stated that field studies have shown that sustained temperatures over 25 °C have been found to be correlated with eelgrass decline. *Id.* at III-20.

166 Because Petitioner has failed to explain why the Region's responses to its comments were erroneous, we could find these arguments to be procedurally barred. *See, e.g., In re P helps Dodge Corp.* , 10 E.A.D. 460, 507 -09 (EAB 2002) ; *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 668 (EAB 2001); *In re Envotech, L.P.*, 6 E.A.D. 260, 268 (EAB 1996).

167 Petitioner has not suggested that another commenter raised this issue nor are we aware of anyone raising this issue.

168 We note that the reason we decline to consider this argument is not because CLF and KRC are amici rather than intervenors; rather, it is because such arguments were raised in reply and/or response briefs rather than in a timely petition. *E.g., Knauf*, 8 E.A.D. at 126 n.9; *Steel Dynamics*, 9 E.A.D. at 219 n.62; *Ames*, 6 E.A.D. at 388 n.22. Because we do not consider this issue further, we need not consider Petitioner's argument that CLF did not raise this issue in its comments on the Draft Permit. *See* Reply at 11 n.17.

169 We discuss these terms more fully below. *See infra* Part VI.B.1. b.i; *see also supra* Part II.C for our earlier summary of section 316(b). For a discussion of CWA section 401, *see infra* Part VI.B.2.b.i.*b*.

170 EPA's "Phase II Rule, " also referred to by some of the participants as the "National 316(b) Rule, " establishes national requirements and procedures under CWA section 316(b) for certain existing power -producing facilities (those designed to withdraw 50 million gallons or more of water per day from waters of the United States for cooling purposes).Phase II Rule, 69 Fed. Reg. 41,576. The Phase II Rule was proposed on April 9, 2002, two months before the Region issued BPS's Draft Permit. *See*NPDES - Proposed Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 67 Fed. Reg. 17,122 (Apr. 9, 2002) [hereinafter Proposed Phase II Rule]. Although the final rule was made available by the Agency on its website on or around February 16, 2004, it was not published in the Federal Register until July 9, 2004. *See*Phase II Rule, 69 Fed. Reg . at 41,576. Thus, the rule was not finalized until nine months after the Region issued BPS's Final Permit. The effective date of the rule was September 7, 2004. *Id.*

171 Insofar as Petitioner's and UWAG's arguments concern the Region's analyses of the costs and/or benefits of closed -cycle cooling, we will address those issues in Part VI.B.4 below.

172 Petitioner also initially appeared to generally challenge the Region's imposition of flow limitations, arguing that CWA secti on 316(b) "only authorizes the agency to regulate physical characteristics of intake structures. "Petition at 33 -34. At oral argument, however, Petitioner stated that it was not raising such a general challenge. Oral Arg. Tr. at 23 (responding to the question of whether volume limitations are *per se* impermissible by stating that "[w]e are not urging it. We haven't urged it in our briefs and we are not urging it in this argument."). We therefore do not consider this issue on appeal.

173 In its Supplemental Brief, the Region also argues that Petitioner is essentially challenging the timing of the permit issuanc e and that the Region has discretion, which it did not abuse, to issue the permit prior to the finalization of the Phase II Rul e. Reg. Suppl. Resp. at 43-44. The Region further argues that, where the previous permit had expired in July 1998 and the Draft Permit had been issued in July 2002, its decision to issue the permit in October of 2003 was reasonable and lawful. *Id.* at 44-45;*see also* MA DEP Suppl. Br. at 13 (arguing that because of various factual, policy, logistical, and equitable reasons, the Permit was reasonab ly issued

when it was, i.e., over nine months before the rule was finalized but a long time after the old permit e xpired). The Region goes on to present seven reasons why it did not abuse its discretion, including the argument that delay would have been futile becaus e Massachusetts' and Rhode Island's WQSs would not have allowed for significant relaxation of the permi t's intake limits in any event. *See* Reg. Suppl. Resp. at 45 -46. Petitioner, however, does not appear to have raised this issue in its Petition. Although Petitioner does mention *in a footnote* in its supplemental brief that it had requested that the Region s tay the issuance of the permit pending completion of the rulemaking, *see* DEBP Suppl. Br. at 23 n.49, Petitioner's section 316(b) *arguments* do not raise the question of the timing of the permit's issuance, *see id.* at 22-25.Furthermore, in its reply brief, P etitioner states that the Region's characterization of Petitioner's position as primarily a challenge to the timing of the permit's issuance is "incorrect." DEBP Reply at 12. Because we do not believe that Petitioner has raised this issue and because Petit ioner in fact appears to argue that it has not raised this issue, we will not address this issue - the question of the timing of the Region's issuance of the permit - further.

174 In particular, two of these amici point to a recent case, *Riverkeeper, Inc. v. EPA* , 358 F. 3d 174 (2d Cir. 2004) , in which several environmental groups successfully challenged certain portions of the Agency' s final section 316(b) rule for new facilities (i.e., the Phase I Rule). RI Suppl. Br. at 7; CLF Suppl. Br. at 9.

175 In our discussion of administrative r ecord issues, we deferred until now our decision as to whether these documents should be considered on appeal. *See supra*Part V.A.1.

176 Section 301 generally applies to existing sources. CWA § 301, 33 U.S.C. § 1311. For a further discussion of CWA section 301, see *supra* Part II.A.

177 Section 306 applies to new sources. CWA § 306, 33 U.S.C. § 1316 . For a brief discussion of this section, see *supra* note 7 and accompanying text.

178 Impingement "occurs when water is drawn into a facility through its cooling water intake structures and organisms too large to pass through the protective screens and unable to swim away become trapped against the screens and other parts of the intake structures."DPDD at 7 -103. "Once impinged, the pressure of the high flowing water holds the fish and other organisms in place against the screens causing injury and frequently death."*Id.* at 7-104.

179 Entrainment occurs to fish eggs and larvae, along with many other organisms, when "cooling water is drawn into the facility and organisms small enough to fit through the mesh of the intake screens pass through the plant cooling system."DPDD at 7 -110. The stresses that occur "are easily sufficient to kill the entrained organisms."*Id.*

180 "Production foregone" is an "estimate of the quantity of biomass that would have been realized by fish killed by a particular stressor, if they had not been killed."DPDD at 7-123. Here, the stressor is entrainment and/or impingement by BPS. *Id.*

181 This assumes that BPS is currently operating under the 1997 Memorandum of Agreement. *See supra* Part III.A.

182 The Region used the "wholly disproportionate" cost-benefit test in its analysis. *See infra* Part VI.B.4.b.i.

183 In the next section, we consider the relevance to the Final Permit of any new interpretations made in the Phase II Rule.

184 Thus, any suggestion by the Board and/or any of the participants in this matter that the Final Permit *required* closed-cycle cooling is merely a shorthand reference to the fact that it is generally accepted that the permit -imposed limits on cooling water withdr awal volumes through the CWISs at BPS necessitate the use of closed-cycle cooling, absent a significant cutback in operations.

185 Petitioner's comments on the Draft Permit argued that the Agency had uniformly rejected closed -cycle cooling as BTA for large, existing plants. On appeal, Petitioner has framed its argument in the inverse - that the Agency had consistently found open -cycle cooling to be BTA. *See* BPS Comments on Draft Permit vol. I, at 73-75.

186 Rather than reiterating the Region's responses to these series of comments, we summarize the main points below.

187 The Region provided three specific examples in which the Agency had imposed or considered imposing requirements that would effectively have required closed -cycle cooling and also cited to a case which indicated that the Agency had imposed such limits. According to the Region, in 1974 the Agency issued a permit to Carolina Power & Light Company's Brunswick Steam Electric Plant whose C WIS flow limits would have required the company to retrofit the power plant with a closed -cycle cooling system.

RTC at IV-6. On appeal, the Region issued an initial decision which upheld the limits. *Id.* The company further appealed, and the Administrator remanded the permit back to the Region on procedural grounds, whereupon the Region essentially reaffirmed its initial decision. *Id.* According to the Region, the matter was settled several years later, in 1980, "under a new Regional Administrator, resolving the dispute without requiring the installation of cooling towers. EPA did not, however, invalidate its earlier analysis or reject the possibility of cooling towers being BTA in some other case." *Id.* (citations omitted).

The Region cited a second example in which the Agency imposed limits that effectively required closed-cycle cooling. *Id.* (citing A.R. 2143 (*In re Florida Power Corp., Crystal River Power Plant*, U.S. EPA Region 4 (Sept. 1, 1988))). In that case, the Agency initially imposed requirements that, as a practical matter, required closed-cycle cooling. *Id.* After a hearing and upon further study, however, the Agency "finally determined that in that case the cost of installing cooling towers would be wholly disproportionate to the benefits. The final determination ultimately required seasonal flow reductions and various environmental mitigation efforts. This was a determination for that specific facility and did not suggest that closed-cycle cooling could not represent BTA for some other plant." *Id.* (citations omitted).

As its third example, the Region cited to portions of the Administrator's discussion in *Seabrook I*, 1 E.A.D. 332 (Adm'r 1977), one of the earliest CWA section 316(b) cases before the Agency. RTC at IV-6. On several occasions in that decision, the Administrator discussed the possibility of imposing closed-cycle cooling. *E.g., Seabrook I*, 1 E.A.D. at 340, 341, 342, and 345. The Region argued that although the Agency ultimately did not require Seabrook station to install closed-cycle cooling, "the language of the *Seabrook* decision indicates that EPA embraced closed-cycle cooling as an option under CWA § 316(b)." RTC at IV-6.

Finally, the Region also cited to a 1989 federal district court case in support of its argument. RTC at IV-6 (citing *Consol. Edison Co. of NY, Inc. ("Con Ed") v. NY State Dep't of Envtl. Conservation*, 726 F. Supp. 1404 (S.D.NY. 1989)). The district court's discussion of the background history in that case mentions the fact that the Agency imposed limitations on several power plants located along the Hudson River that would have effectively required closed-cycle cooling. *Con Ed*, 726 F. Supp. at 1406. Apparently, these were never actually installed because, while these limitations were in dispute, the state was granted approval to run the NPDES program and entered into a settlement agreement with the companies altering their permits. *Id.*; *cf. United States v. Ohio Edison Co.*, 725 F. Supp. 928 (N.D. Ohio 1989) (similar case where Agency essentially imposed closed-cycle cooling but due to various delay tactics and state actions, cooling towers were never constructed; although not entirely clear, closed-cycle cooling limitations in this case were likely required based on effluent, rather than intake, concerns).

188 To the extent that Petitioner is arguing that the Agency could create a *de facto* absolute standard if it were to always conclude that the same standard applied to each and every case before it, we note that this is not the situation here since the Agency has, on occasion, concluded that closed-cycle cooling was appropriate. RTC at IV-6.

189 This, in fact, is the way in which closed-cycle cooling is effectively being required in this case.

190 Interestingly, the preamble to the Proposed Phase II Rule, in discussing the facilities that would be covered by the Phase II Rule, mentioned that "[o]f the estimated 599 utility plants, 314 plants (75 percent) use once-through cooling systems, 65 plants (15 percent) use closed-cycle, recirculating cooling systems, and 49 plants (12 percent) use another type of system." Proposed Phase II Rule, 67 Fed. Reg. at 17,135-36; *accord id.* at 17, 144. The preamble does not relate the reasons why the existing plants with closed-cycle cooling installed those technologies. Also, the proposal did not divide the plants which operate entirely on closed-cycle cooling from those that only partially operate using closed-cycle cooling. *Id.* at 17,135-36. Here, BPS is essentially being required to install closed-cycle cooling throughout its entire facility.

Of further note, the proposal also stated that "[a] closed-cycle recirculating cooling system is an available technology for facilities that currently have once-through cooling water systems. There are a few examples of existing facilities converting from one type of cooling system to another (e.g., from once-through to closed-cycle recirculating cooling system)." *Id.* at 17,154. The proposed rule also stated that "EPA has identified four power plants that would be regulated by today's proposal that have converted from once-through to closed-cycle recirculating cooling systems. Three of these facilities - Palisades Nuclear Plant in Michigan, Jefferies Coal in South Carolina, and Canadys Steam in South Carolina - converted from once-through to closed-cycle recirculating cooling systems after significant periods of operation utilizing the once-through system." *Id.* Again, the proposal does not provide particulars as to why the plants converted their systems.

191 Since Petitioner has essentially conceded that the rule itself does not have retroactive effect, we focus here solely on the argument that the rule somehow confirms a prior determination that open-cycle cooling was BTA in all instances.

192 Petitioner also cites back to arguments it made in connection with its section 316(a), BPJ, and BAT issues. DEBP Reply Br. at 13 nn.22-23 (referring to footnote 5 and page 4 of its reply brief). We have previously discussed those arguments above in Part V.A.1.d.

193 While Petitioner frames its argument in terms of a "statutory interpretation" of BTA, it seems more properly described as an

application of BTA. As an application of BTA, it is susceptible to change over time.

194 As we state in the text, Petitioner's argument presumes that the Phase II Rule now defines a specific cooling system (i.e., open-cycle cooling) as BTA, an issue we need not and do not reach for reasons specified below. As we explained at the beginn ing of our section 316(b) analysis, we do not find the new Phase II Rule to be as clear cut on this question as Petitioner seems to suggest.

195 We do howe ver, GRANT the Region's motion to strike two (of four) "extra-record" documents related to the Phase II Rule. We conclude that the Agency's March 17, 2004 memorandum, created after the Region issued the Final Permit, is a postdecisional document and should be stricken from the record on appeal for the reasons we articulated in Part V.A.1.c of our opinion *supra*. We also conclude that the June 2, 2003 document commenting on the Agency's Notice of Data Availability in the Phase II Rule proceeding, which was not before the Region when it issued the permit, should also be stricken from the record on appeal for the same reasons we discussed in Part V.A.1.d of this opinion. We will, on the other hand, consider the preamble to the final Phase II Rule and the Agency's responses to comments therein, as these documents are in the public domain and relate to the issue at h and. We only consider the final published version of the rule that was published in the Federal Register, however, not the prepublication version. We acknowledge that the rule was published after the Region issued the Final Permit.

196 While Justice Scalia indicated in *Kaiser* that *Ziffrin* does not involve retroactivity *per se*, we note that the principles articulated in *Ziffrin* are derived from cases that involved the issue of retroactivity.

197 The Court did note, however, that in some situations, the application of new statutes (or new rules) may be proper, such as w here a statute or rule is jurisdictional or procedural. 511 U.S. at 273. These exceptions do not appear relevant to eit her *Ziffrin* or the case at hand.

198 In cases where a rule change occurred after an initial decision had been issued by an agency but during the pendency o f an appeal of the decision within the agency, several courts have considered the application of the new rule as involving the issue of retroactivity. *E.g., Portlock v. Barnhart*, 208 F. Supp. 2d 451, 455-561 (D. Del. 2002); *Kokal v. Massanari*, 163 F. Supp. 2d 1122, 1130 (N.D. Cal. 2001). None of these cases, however, dealt with permitting decisions and thus their relevance may be somewhat limited.

199 In *U.S. Pipe* , the limitations in the initial permit decision were essentially based on BPJ because there were no applicable regulations establishing a Best Practicable Technology ("BPT") standard for the iron and steel industry at the time the Region issued the permit. *Baxley*, 557 F.2d at 1108; *see also id.* at 1110 (permit based on "personalized" Best Practicable Technology standard). After initial permit issuance, but while the permit was on appeal at the Agency, regulations were issued that interpreted the BPT standard for this sector of the industry. *Id.* at 1108.

200 In *Liquid Air* , petitioner argued that NPDES regulations adopted just prior to its filing of a request with the region for an evidentiary hearing were applicable to its facility, and that under th ese regulations, its discharge was subject to a permitting moratorium. 5 E.A.D. at 254 n.14. On appeal from the region's denial of petitioner's evidentiary hearing request, we considered the new regulations and concluded that its discharge was not subject to the moratorium. *Id.* Notably, in that case, the regulations at issue had been amended while the permit decision was still before the region, not after. Thus, the facts in that case are arg uably more akin to those in *Ziffrin* than are the facts here. Furthermore, it is not clear whether the *Liquid Air* petitioner filed a request under former regulation 40 C.F.R. § 124.86(c), which specifically authorized a permit applicant to file a motion with the Pres iding Officer during the pendency of an evidentiary hearing requesting that a new regulatory requirement be applied to its permit. This regulatory provision is discussed further in the text below.

201 In *GSX Services*, the Board remanded the permit to the Region so that it could consider the permit in light of a new rule but also noted that the new rule required owners and operators to apply for a permit modification to meet the new rule and provided fo r a "reevaluation of all pending and issued permits where construction has not begun. "4 E.A.D. at 465 n.17. Thus, the rule itself intended that it apply to pending permits. The opposite is true here: the proposed Pha se II Rule was not intended to be used in connection with permits that were currently under consideration at the time of proposal, *e.g.*, 67 Fed. Reg. at 17,124, and the final Phase II Rule was int ended to be applied to permits for which renewal applications were received *after* the effective date of the rule, *e.g.*, 69 Fed. Reg. at 41,593.

202 In fact, the Phase II Rule notes that the "site-specific determination for Brayton Point, Rhode Island, has required resources for greater than two full time equivalents (FTEs) over three years for permi tting and support staff, as well as approximately $400,000 in contractor costs to address technical issues and applicant experts."Phase II Rule, 69 Fed. Reg. at 41,608 n.49.

203 Clearly, if regional offices were required to reconsider every pending permit and every permit on appeal to the Board each ti me a new rule was issued, such a requirement could wreak havoc on the Agency's permitting program.

204 Although the non-contested provisions of the permit generally may go into effect while an appeal is pending, the contested permit provisions have been stayed pending the results of this appeal. *See*40 C.F.R. § 124.16(a)(1)-(2); *see also* Letter from Robert W. Varney, Regional Administrator, to Eurika Durr, Clerk of the Board, and Ernest Hauser, Senior Vice President, PG&E National Energy Group (Apr. 26, 2004) (letter providing notification of which conditions of the Fin al Permit are stayed as a result of the current appeal).

205 Although we do not perform a full -blown analysis of this issue because Petitioner no longer ch allenges the Region's position in this regard, we make several observations here. First, section 316(b), 33 U.S.C. § 1326(b), which sets forth the technology -based standards for CWISs, specifically references section 301, 33 U.S.C. § 1311(b)(1)(C). Section 301 has been interpreted to require that state WQSs be applied if they are more stringent than the technology -based standard that would otherwise apply. CWA § 301(b)(1)(C), 33 U.S.C. § 1311(b)(1)(C) ; *see In re City of Moscow* , 10 E.A.D. 135, 168 (EAB 2001) (stating that section 301(b)(1)(C) "requires unequivocal compliance with appli cable [WQSs], and does not make any exceptions for cost or technological feasibility"); *In re City of Fayetteville*, 2 E.A.D. 594, 600-01 & n.15 (CJO 1988) (same); *see also U.S. Steel Corp. v. Train*, 556 F.2d 822, 838 (7th Cir. 1977). Second, EPA's NPDES regulations prohibit the Agency from issuing an NPDES permit "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States."40 C.F.R. § 122.4(d). The Supreme Court has held this regulation to be a "reasonable exercise of the Agency's statutory authority."*Arkansas v. Oklahoma* , 503 U.S. 91, 105 (1992) . Likewise, in the recent case *Riverkeeper, Inc. v. EPA* , the Court of Appeals for the Second Circuit found the Agency's interpretation that a CWIS permit is also "contingent on compliance with whatever additional requirements the permitting authority (be it a state or EPA) decides are necessary under state law " to be a reasonable exercise of its authority under the Act. 358 F.3d 174, 200 -02 (2d Cir. 20 04). Notably, it was in response to questions about the applicability of the *Riverkeeper* case that Petitioner's attorney explained that it was not seeking review of the general statutory construction/interpretation issue.

206 Because none of the other participants appear to be maintaining that, as a matter of statutory construction, state WQSs do not apply to section 316(b) determinations, we only summari ze those arguments that were raised by the various participants that we believe have a bearing on any Massachusetts or Rhode Island WQSs issue Petitioner is still raising.

207 In establishing WQSs pursuant to the CWA, Massachusetts and Rhode Island assigned each surface water body, or portion thereof, within their state to a "class," which is then defined by designated uses applicable to that class. Mass. Regs. Code tit. 314, § 4.05(1); R.I. Code R. 12 190 008.B. Generally, the classes range from "A" to "C," although additional classes may be assigned for certain types of waters. Mass. Regs. Code tit. 314, § 4.05(3)(a) -(c), (4)(a)-(c); R.I. Code R. 12 190 008 .B(1)(a)-(c), (2)(a)-(d). Marine and coastal waters are also denoted by an "S," apparently referring to "seawater." *E.g.*, R.I. Code R. 12 190 008.B.2. For a further discussion of Massachusetts' classifications, *see infra* note 219 and accompanying text.

208 Petitioner additionally claims that the Region first identified the state WQSs as one of the bases for the permit' s limits in the Response to Comments document. DEBP Suppl. Br. at 35; *see also* DEBP Reply Br at 18 -19; Oral Arg. Tr. at 23. This is not accurate. Although at the time the Region issued the Draft Permit and the Determinations Document the two states had not yet submitted their section 401 letters to the Region, the Region explained in the Determinations Document that "[t]he permit's requirements pertaining to CWISs under CWS § 316(b) must also be consistent with applicable State legal requirements including [WQSs]." DPDD at 7-27. Later in this same section of the Determinations Document, the Region discussed the two states' WQSs and came to the conclusion that BPS's current levels of entrainment and impingement appeared to be causing violations of both states' WQSs. *Id.* at 7-129.The Region further determined that only the Closed -Cycle Entire Station option would satisfy these WQSs standards in the future. *Id.* The Region further noted that it would "carefully review the water quality determinations by each state under CWA § 401 in order to verify how the states interpret and apply their own [WQSs] to this situation. "*Id.* Thus, it appears that the Region did raise the distinct possibility that the state WQSs could require closed-cycle cooling prior to stating it in its Response to Comments document. This is further evidenced by the fact that Petitioner raised this issue in its comments on the Draft Permit. *See* BPS's Comments on Draft Permit attach. 4, at 27; *see also* RTC at IV-12, cmt. 11 (summarizing a comment from Petitioner concerning the applicability of state WQSs to 316(b) requirements). Thus, while the issues relating to WQSs seem t o have evolved as this matter (and, indeed, this appeal) has progressed, it was identified as a consideration in setting the in take limits from the draft permit stage onward. Accordingly, we conclude that Petitioner's suggestion of procedural error on this issue i s without merit. Furthermore, while Petitioner's arguments as to the effect of the Massachusetts' and Rhode Island WQSs a ppear primarily in its supplemental brief rather than in the Petition, we will consider them since they are a direct response to ar guments set forth in the Region's Response supporting its decision.

209 Section 301(b)(1)(C) provides that, by July 1, 1977, "there shall be achieved * * * any more stringent limitation, including those necessary to meet water quality standards * * * established pursuant to any S tate law or regulations (under authority preserved by section [510, 33 U.S.C. §] 1370 of this title) * * * or required to implement any applicable [WQS] established pursuant to this chapter."CWA § 301(b)(1)(C), 33 U.S.C. § 1311 (b)(1)(C).

210 Section 122.4(d) prohibits EPA from issuing an NPDES permit "[w]hen the imposition of con ditions cannot ensure compliance with the applicable water quality requirements of all affected States. "40 C.F.R. § 122.4(d); *see In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 329 (EAB 2002). The regulations at section 122.44 contain similar requirements. They instruct EPA to impose conditions that "[a]chieve [WQSs] established under section 303 of the CWA, including State narrative criteria for water quality," and to '[i]ncorporate any more stringent limitations * * * established under Federal or State law or regulations in accordance with sect ion 301(b)(1)(C)."40 C.F.R. § 122.44(d)(1) ; *see Gov't of D.C.* , 10 E.A.D. at 329; *In re City of Moscow* , 10 E.A.D. 135, 151 (EAB 2001).

211 The Region's statements about Massachusetts' certification imply that the conditions may be considered "attributable to s tate certification." At oral argument, however, counsel for the Region clearly disclaimed this position. Oral Arg. Tr. at 59,

212 According to the Region, Rhode Island has narrative standards that designate Mount Hope Bay as a high quality "habitat for fish and wildlife" and state that waters should be free of anthropogenic activities that "adversely affect the * * * integrity of the habitat."Response at 95 (citing R.I. Code R. 12 190 008.B.2.a, .b, D.1.a.ii).

213 Anthropogenic activities are activities that occur in connection with man (as opposed to naturally-occurring activities).

214 Interestingly, Rhode Island's letter states that the conditions in the Draft Permit allowing limited intakes and discharges *violate* its WQSs. RI Section 401(a)(2) Letter at 1. The letter then states that, despite this violation, the state does not object to the permit but requests the Region consider further restrictions to alleviate its concerns. *Id.* at 2. At oral argument, Rhode Island reiterated this same general position. Oral Arg. Tr. at 83. There, counsel for Rhode Island stated that "there are elements of the permit as issued that will not comply or are likely not to comply with Rhode Island's [WQSs], specifically the 122 hours of once -through cooling that are allowed under the permit. We believe that in that mode, that the *thermal discharge* will violate Rhode Island's [WQSs]."*Id.*(emphasis added). Thus, it appears that it is the thermal discharge component of the 122 hours of once-through cooling rather than the cooling water intake component that the state believes would lead to violations of Rhode Island's WQSs. Therm al discharges are addressed under section 316(a) and, as previously discussed, the Region granted a variance under section 316(a), which was based on a variance from both technology -based and WQS standards. *See* RTC at I-3 to-4, III-3; DPDD at 6-57 to-58, 8-3. Conseque ntly, it does not appear that Rhode Island is alleging any potential violations of its WQSs related to the Final Permit's *section 316(b)* conditions. Therefore, we need not consider whether we can or should remand the Final Permit based upon a suggestion in the administrative record that a permit condition likely violates state WQSs even where a state has chosen not to object. *See In re City of Marlborough* , NPDES Appeal No. 04 -13, slip op. at 21 -24 (EAB Aug. 11, 2005), 11 E.A.D. ___; *In re Teck Cominco Alaska, Inc.*, NPDES Appeal No. 03-09, slip op. at 48-51 (EAB June 15, 2004), 11 E.A.D. ___; *see also* procedural discussion of this issue *infra* note 215.

215 CLF and KRC also allege that the cooling water requirements in the Final Permit are *not stringent enough* to meet the requirements of Rhode Island's WQSs. CLF Suppl. Br. at 26; *see* KRC Br. at 6; *see also* discussion of Rhode Island's Section 401(a)(2) Letter *supra* note 214. This particular argument was solely raised in responsive briefs and not in a timely petition for review. Consequently, for the same reasons we found a similar argument brought pursuant to section 316(a) to be untimely, *see supra* Part VI.A.3. b.iii, we find this section 316(b)-based argument to be untimely and thus procedurally barred.

216 This is the issue that Petitioner, at oral argument, indicated it was no longer challenging. *See supra* note 205.

217 Petitioner only challenges the timing of this statement, *see supra* note 208, not the accuracy of the statement.

218 Neither Petitioner nor UWAG indicate what such a provision would look like; presumably, such a provision would establish some type of numeric intake limits or criteria or some other type of design specifications for CWISs.

219 "Designated uses are those uses specified in [WQSs] for each water body or segment whether or not they are being attained. "40 C.F.R. § 131.3(b). As mentioned by several of the particip ants, Massachusetts has classified the relevant segments of Mount Hope Bay as either Class SA or SB. Mass. Regs. Code tit. 314, § 4.06(3), tbl. 15. The designated uses of a Class SA water body include "an excellent habitat for fish, other aquatic life and wildlife."*Id.* § 4.05(4)(a). One of the designated uses of a Class SB water body

is as a "habitat for fish, other aquatic life and wildlife."*Id.* § 4.05(4)(b).

220 Several other participants likewise interpreted Petitioner's argument as questioning whether the Region or the State could re ly on Massachusetts' designated uses. *See, e.g.*, Reg. Suppl. Resp. at 36-37; MA Br. at 9-10.

221 This section also provides that such WQSs "shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. "CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); *accord PUD*, 511 U.S. at 704.

222 This is a separate issue from the question of whether Massachusetts, in this case, actually set forth any cooling water intake and/or withdrawal limitations in its 401 Water Quality Certification based upon its designated uses. We address this question next.

223 Petitioner and UWAG also argue that an extra -record MA DEP e-mail, which is attached to their briefs, "reflects that the agency informed Region I that Massachusetts does *not* interpret its [WQSs] to impose any particular limit on cooling water withdrawals."Petition at 35 (referring to Petition attach. G (E -mail from Richard Lehan, Office of General Counsel, MA DEP, to Glenn Haas, MA DEP (undated) [hereinafter Lehan e -mail]); *accord* UWAG Br. at 30 (referring to UWAG Br. attach. 6 (Lehan e-mail)). As we discussed earlier in this opinion, *see supra*Part V.A.3.d, we decline to supplement the record with this extra-record document. Moreover, even if we were to supplement the administrative record with this e-mail, we would not find that it provides much support for Petitioner and UWAG's contention, and it certainly is not sufficient evidence to demonstrate clear error on the part of the Region. The e -mail states, in relevant p art, that "we do believe there is a connection between entrainment and impingement impacts and compliance with designated uses in our WQS[s], but we do not presently read our WQS[s] as dictating or specifically determining the *intake design capacity* of a CWIS in the same manner or to the same degree as EPA's determination under its express authority in [section] 316(b)." Lehan e-mail at 1 (emphasis added). The e-mail then goes on to say that, based on this reading of its WQSs, MA DEP can state in its certif ication that "the draft permit's requirements for [BPS's] CWIS[s] * * * adequately address the entrainment and impingement impacts from the CWIS[s] and should result in the attainment of designated uses of Mount Hope Bay. "*Id.* The e-mail thus seems to indic ate that while Massachusetts' WQSs do not contain any *specific* design criteria regarding CWISs, the WQSs do contain designated uses that apply to impacts of the CWISs, which is presumably why MA DEP felt it could provide the quoted statement in its 401 certification.

224 Specifically, the provision states that:
Any applicant for a Federal license or permit to conduct any activity * * * which may result in any discharge into the naviga ble waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, * * * that any such discharge will comply with the applicable provisions of sections [301, 302, 303, 306, 307, 33 U.S.C. §§] 1311, 1312, 1313, 1316, and 1317 of this title. * * * No license of permit shall be granted until the certification required by this section has been obtained or has been waived * * *. No license or permit shall be granted if certification has been denied by the State * * *.
CWA § 401(a)(1), 33 U.S.C. § 1341(a)(1). The certification is deemed waived if the state fails or refuses to act within a certain period of time. CWA § 401(a)(1), 33 U.S.C. § 1341(a)(1).

225 Thus, the certification does not contain a statement of the extent to which the CWIS conditions can be made less stringent un der state law, including WQSs, as required by 40 C.F.R. § 124.53(e)(3). Such a statement would have almost certainly clarified this issue.

226 Although we typically do not consider information and/or documents outside the four corners of the certification document whe re the certification letter itself are unambiguous, *In re City of Fitchburg*, 5 E .A.D. 93, 98 (EAB 1994), we may consider such information where there is ambiguity or to explain the statements in the letter. *See, e.g., In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 343 (EAB 2002); *In re D.C. Dep't of Pub. Works*, 6 E.A.D. 470, 474 (EAB 1996).

227 Thus, although the Region relied on the state's adoption of the same conditions in a state permit as an indication that the permit conditions were necessary to protect WQSs, and although we did find a similar adoption significant in our conclusion in *Hooksett* that the conditions were attributable to state certification, 4 E.A.D. 468, 471-72 (EAB 1993), in this case any ambiguity was clearly resolved by the state's statements at oral argument.

228 As we explained earlier, Petitioner and UWAG did not phrase their Massachusetts' WQSs arguments in precisely this manner. Upon consideration of the arguments in their briefs and at oral argument, however, we find that this is the essence of their arguments, apart from those (rejected earlier in this decision) questioning whether Massachusetts' WQSs were even potentially relevant.

229 In *Ina Road*, the Chief Judicial Officer mentioned a few situations in which a region may impose stricter limitations. *See*2 E.A.D. at 100-01.He stated that where a state commits clear error in its certification, such as where the state overlooked applicable WQSs, then the region could rectify the error by imposing limitations that meet those overlooked WQSs. 2 E.A.D. at 100.He also indicated that, in certain cases where the region disagrees with the state's interpretation of the state's WQSs, it may be possible for the region to substitute its interpretation for the state's. *Id.* at 101 n.7. He noted that, in such cases, the region would be more likely to prevail if it "bolstered its interpretation by showing that its interpretation also had strong scientific or technological support. "*Id.* Here, of course, there is no evidence of disagreement between the Region and the state as to the interpretation of the state WQSs.

230 Section 510 states:
Except as expressly provided in this chapter, nothing in this chapter shall (1) preclude or deny the right of any State * * * to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution; except that if an effluent limitation, or other limitation, effluent standard, prohibition * * * is in effect under this chapter, such State may not adopt a less stringent limitation.
33 U.S.C. § 1370 . This section has been interpreted as recognizing a state's sovereign authority to impose more stringent water quality controls than the Agency sets under the Act. *See, e.g.*, PUD, 511 U.S. at 705; *Arkansas v. Oklahoma*, 503 U.S. 91, 107 (1992); *Riverkeeper*, 358 F.3d at 201.

231 The Region's conclusions were based on its earlier comprehensive analysis of the levels of entrainment and impingement currently at BPS and likely to occur under all the options it considered. DPDD at 7 -102 to-126. See our discussion of the Region's analysis of these losses *supra* Part VI.B.1. b.ii.

232 According to section 101(a), the Act's broad purpose is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."CWA § 101(a), 1251(a)."The application of state [WQSs] in the interstate context is wholly consistent with this purpose."*Arkansas*, 503 U.S. at 105.

233 *See also Perrin v. United States*, 444 U.S. 37, 42 (1979) ("A fundamental canon of statutory construction is that, unless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning. "); *Rucker v. Wabash R.R. Co.* , 418 F.2d 146, 149 (7th Cir. 1969) (stating that the rules of statutory construction also apply to administrative regulations).

234 Significantly, when discussing the biological impacts of BPS's cooling water withdrawals, the Region focused on Mount Hope Bay as a whole, not just the Massachusetts portion of the Bay. *See generally* DPDD at 7 -102 to-130. Thus, the Determinations Document includes statements such as "Mount Hope Bay is the appropriate frame of reference, "*id.* at 7-116,"the facility has taken large percentages of the *Mount Hope Bay population* of a variety of commercially and recreationally important fish species, "*id.* at 7-125 (emphasis added), and "in order to give the *Mount Hope Bay ecosystem* a chance to recover, "*id.* at 7 -127 (emphasis added).*See also* RTC at IV-41, VII-30 to-31.

235 Petitioner and UWAG also argue that broadly interpreting the statute and regulations as the Region has done here "would work an extraordinary and unworkable change in the balance under the CWA. "UWAG Br. at 35 -36; *see* DEBP Suppl. Br. at 39. They predict that such an expansive interpretation would mean that any downstream state located within the migratory pattern of any fish species potentially affected by a facility's CWISs that also has narrative criteria related to fish habitat could regulate the facility. UWAG Br. at 35-36; DEBP Suppl. Br. at 39-40. They assert that this is not what Congress intended. UWAG Br. at 36; *see also* DEBP Suppl. Br. at 40. We read these arguments as raising concerns that the Region could interpret "affected states" unduly broadly under this regulatory provision. We think these arguments are overstated. The regulation, by using the term "affected," is self-limiting. *See In re City of Fayetteville* , 2 E.A.D. 594, 601 n.16 (Adm'r 1988) (stating that "[t]he element of detectability is implied by EPA's regulations "). It seems to us that it would be difficult for EPA to reasonably establish effects as the distances become greater or depend on tenuous connections to the waterbody where the facility is located. *See id.* at 601 (explaining that "a mere theoretical impairment " of a downstream state's WQSs "should not by itself block the issuance of the permit "); *see also Arkansas*, 503 U.S. at 111 (finding that requiring an "actually detectable or measurable change in water quality " is reasonable in the interstate context because, if "theoretical impact[s] on a downstream State were interpreted as 'degrading' the downstream waters, downstream States might wield an effective veto over upstream dischargers "). In contrast, here the waterbody where both the intake and discharges occur is located in the Bay shared by the two jurisdictions, making it obvious that impacts on the water, especially since they are so substantial, can affect both jurisdictions' water quality and designated uses.

236 In its 401(a)(2) letter, Rhode Island stated that "it is the State's position that these permit conditions will result in a violation of RI Water Quality Standards for temperature and temperature change specified in Rule 8.D(3) of the RI water Quality Regulations and that entrainment and impingement impacts associated with once -through cooling will violate the general criteria for the protection

of aquatic life specified in R ule 8.D.1."Letter at 1. The former rule, which is related to temperature and temperature change appears to be solely related to thermal impacts, which are governed by section 316(a), not 316(b). Thus, of the two rules cit ed by Rhode Island, only Rule 8.D.1 would be relevant for cooling water intake impacts. Rule 8.D.1 states that "all waters shall be free of * * * anthropogenic activities subject to these regulations that: i. Adversely affect the composition of fish and wildlife; i i. Adversely affect the physical, chemical, or biological integrity of the habitat; iii. Interfere with the propagation of fish and wildlife; [or] iv. Adversely alter the life cycle functions, uses, processes and activities of fish and wildlife." * * *." Rule 8.D.(1)(a)(iv).

237 Rule 8.D.1 contains Rhode Island's general water quality criteria, which are "parameters of minimum water quality necessary to support the surface water use classifications of Rule 8.B."R.I. Code R. 12 190 008.D. In its entirely, Rule 8.D.1 states:
The following minimum criteria are applicable to all waters of the State, unless criteria specified for individual classes ar e more stringent:
(a) At a minimum, all water shall be free of pollutants in concentrations or combinations or from anthropogenic activities subject to these regulations that:
i. Adversely affect the composition of fish and wildlife;
ii. Adversely affect the physical, chemical, or biological integrity of the habitat;
iii. Interfere with the propagation of fish and wildlife;
iv. Adversely alter the life cycle functions, uses, processes and activities of fish and wildlife;
v. Adversely affect human health.
R.I. Code R. 12 190 008.D.1a.i-v.

238 Thus, even if Rule 8.D were found not to apply here, the designated uses at 8.B would still apply.

239 We agree with Rhode Island that, when a state has several designated uses, just because one use allows an activity, it does n ot mean that such activity may continue if it causes violations of the state WQSs for one or more of the other designated uses.

240 UWAG also raises an argument specifically with respect to the use of CWA section 301(b)(1)(C). It argues that the Region may not rely on that section to impose conditions related to intakes because section 301 only applies to *discharges*. UWAG Br. at 36. In support of its position, UWAG points out that the section is entitled "Effluent limitations" and that section 301(b) is intended merely as a timetable for achieving the goal of eliminating "discharges." *Id.* Since this argument was not raised in the Petition, it is not properly before us. Even if it had been, we would have rejected it. We note that in *PUD*, the dissent took a position similar to that put forth by UWAG, arguing that section 301 is concerned solely with discharges, not broader water quality st andards, and therefore could not be used "as a source of authority to impose conditions unrelated to discharges."*PUD No. 1 v. Washington Dept. of Ecology*, 511 U.S. at 730 n.2. The majority unequivocally disagreed, concluding that, although section 301 is predominantly focused on discharges, "it also contains a broad enabling provision which requires States to take certain actions, " and therefore "is not limited to discharges." *Id.* at 713 n.3; *Roosevelt Campobello Int'l Park Comm'n v. EPA* , 684 F.2d 1041, 1056 (1st Cir. 1982) (holding that EPA did not have the authority to ignore the state's conditions, which were unrelated to effluent limitations b ut did relate to water quality); *cf. Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 201 (2d Cir. 2004) (while reviewing the Agency's recent Phase I Rule, including a challenge to a new regulation which required new facilities to comply with any more stringent requirements imposed under state law, the court stated that "[a]lthough [section 510] refers to the discharge of pollutants, we do not believe that Congress necessarily intended to prevent the states from i mposing tougher restrictions on intake structures alone "); *U.S. Steel Corp. v. Train*, 556 F.2d 822, 837-39 (7th Cir. 1977) (noting that state standards do not have to be technology -based, may require more pollution control than the technology-based standards the Agency may impose, and furthermore that section 301(b)(1)(C) is "the ultimate source of the Administrator's obligation to put the state limitations in the permit").

241 Petitioner also claims that the Region, in its briefs, has essentially rewritten history by raising arguments that were not r elied upon for the basis of the Final Permit. Reply Br. at 14 & n.24. Insofar as the Region may raise any new rationales for its permit, we will not consider them in our analysis of this issue.

242 Most of the arguments on pages 46 to 47 of the Petition are essentially a revamping of Petitioner's earlier arguments challen ging the Region's decision to reject Petitioner's variance proposal. We have already addressed these issues in detail above. *See generally supra* Part VI.A.3. b.ii. The only new argument is Petitioner's claim that the Region "raised the bar" between the draft and final determinations for determining what level of impacts will support the recovery of fish, Petition at 47, which we co nsider below.

243 The 2003 report cited by Petitioner is the Gibson 2003 Draft Report discussed previously in Part VI.A.2.b.ii.*e*.

244 In its reply brief, Pe titioner also argues that "an effect on fish populations from an increase in cooling water intake would [likely]

be reflected in trawl catches some [time] later " because entrainment and impingement primarily affect eggs and larvae whereas trawls generally catch older fish. *See* DEBP Reply Br. at 15. In connection with this argument, Petitioner presents a new figure that, as far as we can tell, has not heretofore been submitted to the record. *Id.* The new figure is premised upon two years as being the appropriate time frame in which to compare cooling water intake effects with fish abundance. The question of precisely when a cooling water intake effect on fish populations would be seen in trawl data (i.e, six months, one year, one -and-a-half years, two years, three years) and how it should properly be calculated in conjunction with other measurements is a scientific issue that should have been raised during the permit proceedings before the Region, not for the first time during this appeal. Accordingly, we will not consider this late argument, or the associated new figure, further.

245 The catch efficiency is the percent of fish present in the trawl's path that it in fact catches. *See* RTC at IV-49.

246 Petitioner maintains that it has since obtained the underlying data that had been used by the RIDFW - which the Region had allegedly omitted from the record - and that its consultants (LMS) have confirmed via a new calculation that the efficiency had indeed been 2%. *Id.* at 28 & n.60. Petitioner requests that the Board include its new calculation in the record. *Id.* at 28 n.60 (requesting inclusion of Exhibit L, an LMS Memo dated June 1, 2004). For the reasons discussed above, we declined to supplement the re cord with this document. *See supra* Part V.A.3. c. Accordingly, we will not consider the exhibit nor will we consider Petitioner's scientifically-based arguments based on that exhibit.

247 Petitioner also seems to challenge the Region's alleged reliance on a 75% catch efficiency for the MRI study. *See* DEBP Suppl. Br. at 28 (stating that the Region has acknowledged that in order "for the MRI trawl to c atch the winter flounder it does from a population of 10,000, it would have to catch 75 percent of everything in its path. No trawl is nearly so efficient * * *. ") (citing RTC at IV -49). However, the premise of this argument is unclear, as nowhere on that page of the Response to Comments document does the Region state that it relied upon a 75% catch efficiency for the MRI data. In fact, the only place where the Region does discuss MRI catch efficiencies, it states that "MRI assumes a catch efficiency of *50 percent* for winter flounder with their gear."RTC at IV-49 (citing a personal communication from one of the researchers) (emphasis added). This suggests that the Region relied upon a 50% catch efficiency for the MRI study, not a 75% efficiency. Petitioner m ay have confused this efficiency with the claimed efficiency of the Rhode Island trawl surveys, for which the RIDEM "assumes a catch efficiency of 75 percent for flatfish."*Id.* (citing a personal communication with one of RI's researchers). Moreover, later in its same brief, Petitioner admits that the Region relied on a statement that the MRI trawl efficiency was 50%. *See* DEBP Suppl. Br. at 29 n.61. In this later footnote, Petitioner asserts that this figure was from an "unrelated trawl " without providing *any* explanation or basis in support of its assertion. *See id.* We find that these two arguments (i.e., Petitioner's arguments that we have described in this footnote) lack sufficient information and/or specificity to be considered further, especially in ligh t of statements in the administrative record that completely contradict Petitioner's statements. *See, e.g., In re Commonwealth Chesapeake Corp.* , 6 E.A.D. 764, 772 (EAB 1997) (requiring petition to have sufficient information from which the Board could conclude that the permitting authority clearly erred); *In re P.R. Elec. Power Auth.*, 6 E.A.D.253, 255-56 (EAB 1995) (same); *see also In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 708 (EAB 2002) (requiring "allegations of error [to] be specific and substantiated "); *In re Hadson Power 14 -Buena Vista*, 4 E.A.D. 258, 294 n.54 (EAB 1992) ("[M]ere allegation of clear error is far from satisfying burden under section 124.19 of providing a 'statement of reasons' showing that the permit is based on clear error.").

248 On page 7-126 of its Determinations Document, in determining what the BTA for BPS should be, the Region stated that "[i]n order to give the Mount Hope Bay ecosystem a chance to recover, the total number of organisms taken via entrainment and impingement by [BPS] must be dramatically reduced. "DPDD at 7 -126. The Region concluded that such dramatic reductions could be accomplished by converting BPS to closed -cycle cooling and that "[c]oupling the [entrainment and impingement] reductions with current fishing restrictions and water pollution controls * * * will result in the increased survival of large numbers of ind ividual organisms. EPA believes this level of increased survival of individuals will foster the recovery of specific fish populations a nd the Mount Hope Bay ecosystem as a whole. "*Id.* The Region had earlier estimated that converting BPS to closed -cycle cooling would result in a loss of 26 percent of winter flounder in the Bay (as opposed to other options which would result in significantly higher losses).*Id.* at 7-119, tbl. 7.5-8.

249 Petitioner, in its comments on the Draft Permit, claimed that its proposed variance would result in impacts of only 5 or 10 p ercent of the Bay's winter flounder population. RTC at VII -29 (mentioning Petitioner's claimed 5 percent value), II I-48 (mentioning Petitioner's claimed 10 percent value).

250 In its arguments, Rhode Island also assumes that the Region relied upon a 75% trawl catch efficiency. RI Suppl. Br. at 11 -14. This may be due to the fact that Rhode Island relied on Petitioner's assertions of what the Region relied upon in its analysis. *See id.* at 11.Nonetheless, as we noted in footnote 247 *supra*, the Region stated in its Response to Comments document that the MRI study assumed a 50% catch efficiency and the RIDEM study assumed a 75% catch efficiency.

251 It is difficult to confirm that Petitioner did indeed raise each and every issue in its comments because Petitioner, in its b riefs, does not always cite to the location in the record where i t previously raised the issue it raises now on appeal. In general, however, Petitioner's arguments on appeal appear to have been raised before the Region. That being said, there are at least two "comments" that clearly appear to be newly raised on appeal. As discussed above, *see supra* note 244, Petitioner submits a figure in the course of this appeal that does not appear to have been submitted previously and also requests that the Board accept a new calculati on of trawl efficiencies created after the permit was issued and after the administrative record was completed.

252 In fact, the Region noted that there were discrepancies between the data as reported by DeAlteris and the same data as reported by the agency that had made the measurements. RTC at VII-32,-34. These problems were apparently later rectified by DeAlteris. *Id.* at IV-73.

253 We note that the Gibson Draft 2003 report does not appear to stand for the proposition that Petitioner argues it does, i.e., that the report indicates that "*all* available data should be examined. " Petition at 40. While it is tr ue that Gibson undertook the new modeling method used in his study in an attempt to utilize all available data equally, he does not suggest that this method i s better than relying upon data that is believed to be the most statistically significant and/or r elevant. *See* A.R. 3191, Ex. 16 at 2. In fact, in a follow-up letter to the Region regarding his 2003 study, he notes that his new methodology may contain errors due to reliance on all data equally. *See* A.R. 3198, Ex. 10, at 1 (stating that while the use of all available data with equal weighting is "objective in one sense, the convention could still provide erroneous results if some input data is more reliable than others").

254 In fact, in its responses to comments from Petitioner, the Region clarified this particular point several times, explaining t hat it had not intended to indicate "that a 26 percent loss (or any ot her particular percentage loss) of the Mount Hope Bay winter flounder population to entrainment and impingement by the BPS cooling water intake would be 'acceptable.'" RTC at IV-51; *accord id.* at III-29, III-48. The Region explained that it had merely "acknowledged the impact, and recognized that BPS will likely not be able to significantly improve upon that level by further technological fixes. "*Id.* at VII -29; *accord id.* at IV -51. The Region also explained that control technologies that could reduce these i mpacts further were not deemed to be practicable from an engineering standpoint. RTC at IV -51. The Region further noted that, as the winter flounder population recovers in response to the Final Permit, as well as the other measures being implemented in the Bay, the percent loss will drop below the estimated 26 percent. RTC at VII-29.

255 We cannot see how the calculations for entrainment and impingement loss es resulting under Petitioner's proposed variance, which is closed-cycle cooling for less than the entire facility, could ever be less than the entrainment and impingement losses for entire facility closed-cycle cooling. Thus, if 26 percent is the value fo r the entrainment and impingement losses under the Final Permit, than the value for these same type of losses under Petitioner's proposal must necessarily be higher.

256 We think it appropriate for a permit issuer, in response to comments, to clarify statements made in its draft permit determin ations, especially where such statements have led to confusion. This would seem to be one of the purposes of taking comments on a draft permit. Thus, the fact that the Region clarified its statements does not mean that the Region necessarily erred.

257 For a discussion of the history of the "wholly disproportionate" test, see *infra* Part VI.B.4.b.i.

258 Petitioner, by asserting that the Region erred in several respects in its cost analysis, implies that costs must be considere d. UWAG goes further in arguing its position that costs must be considered under section 316(b), providing a statutory analysis of the provision. UWAG Br. at 7-8. UWAG argues that, although section 316(b) does not expressly state that "costs must be considered," the provision does require the best technology "available." UWAG Br. at 7. UWAG also contends that the fact that CWA section 316(b) references section 301 and 306, both of which do require a consideration of costs, indicates that costs must be consid ered. *Id.* Finally, UWAG notes that the Phase II Rule preamble, the legislative history of the section, and the recent case, *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 195 (2d Cir. 2004), all support this interpretation. UWAG Br. at 7.

259 Petitioner also questions the Region's failure to perform "a more realistic " cost estimate after allegedly acknowledging in its response to comments that such an analysis was appropriate. Petition at 26 (claiming that, although the Region acknowledged receiving comments "suggesting the need for a more realistic estimate of costs by a firm with experience in power plant construction and retrofitting, " the Region declined to perform such an analysis (referring to RTC at IV -76)); *see also id.* at 48 (questioning failure to provide independent estimate). We find Petitioner's implications to be misleading and its argument without merit. In the Response to Comments document, the Region responded to comments concerning the Region's cost estimates and, in particular, about the work of SAIC, the firm the Region hired to assist in reviewing the capital and operating costs of conversion. *E.g.*, RTC at IV-75 to-77. The Region explained that "[t]he combination of SAIC's independence from the power plant industry as

a firm, which eliminates potential conflicts of interest, and the fact that its personnel have knowledge and experience with power plants, makes SAIC well suited for the task of considering, on behalf of EPA, the costs of retrofitting BPS with mechanical draft cooling towers."*Id.* at IV-76. The Region also noted that, based on a comment suggesting the use of another engineering firm to develop costs, it explored the possibility of obtaining another such estimate. *Id.* The firm the Region approached estimated that it would cost nearly "$300,000 to produce such an estimate."*Id.* The Region felt such a high sum unjustified because it had already "devoted significant public resources to developing cost estimates using SAIC, " a process which had included, besides assessing the engineering aspects of the cost of the technology alternatives, evaluating the permittee's estimates and considering the comments on SAIC's estimates. *Id.*;*see also* DPDD at 7-76 to-94 (describing SAIC's initial analyses used in the development of the Draft Permit). Concluding that it had already "gone well beyond its minimum legal obligation to consider costs, " the Region did not obtain what it considered to be a "third cost estimate." RTC at IV-76. Contrary to Petitioner's implications, the record in no way indicates that the Region believed another such analysis was *required* or even appropriate under the circumstances. We do not find that the Region clearly erred in so concluding.

Furthermore, although Petitioner generally alleges that "[t]he approach used by SAIC was flawed and did not meaningfully respond to the estimates the Permittee submitted to the record, " Petition at 48, it does not specify which estimates SAIC allegedly failed to respond to, nor does it even point to any sections of its Table 3 that may be connected with this procedurally-based argument. As we discuss below, the Region itself (or via incorporation of SAIC's comments) did respond to several comments about the decision to use SAIC's analyses and the reasons certain of Petitioner's estimates were not used. *See infra* Part VI.B.4.b.ii.*b, .d*. The Region also, at least generally, responded to challenges to certain specific cost values and revised its estimates based on those comments. *See, e.g.*, RTC vol. II, apps. O-T. Without a more particularized presentation of its argument, Petitioner has not provided sufficient information from which we can conclude that the Region erred in this respect. *E.g., In re Envtl. Disposal Sys., Inc.* , UIC Appeal Nos. 04-01 & 04-02, slip op. at 48-52 (EAB Sept. 6, 2005) (denying review of petitioner's arguments where they consisted of "little more than broad, unsubstantiated assertions "), 11 E.A.D. ___; *In re Commonwealth Chesapeake Corp.*, 6 E.A.D. 764, 772 (EAB 1997) (requiring petition to have sufficient information from which the Board could conclude that the permitting authority clearly erred); *In re P.R. Elec. Power Auth.*, 6 E.A.D.253, 255-56 (EAB 1995) (same).

260 According to the Determinations Document, "non-use" (or "passive") values "represent the value that people place on a natural resource unrelated to actual use of that resource."DPDD at 7-141. Non-use values include "'existence value,' which represents the value that people received from knowing that healthy fish populations are being conserved in a waterway, and 'bequest value,' which represents the value people place on knowing that healthy fish populations have been preserved for future generations."*Id.* at 7-137;*accord id.* at 7-141.The Region also mentioned that courts have averred that "natural resources have values that are not fully captured by the market system" and, to fully value a resource, these other values, such as non-use values, should also be assessed. *Id.* at 7-141 (quoting *State of Ohio v. U.S. Dep't of the Interior*, 880 F.2d 432, 462 (D.C. Cir. 1989)).

261 In its Petition, Dominion seems to imply that the Region has not actually *calculated* benefits but instead has merely provided conclusory arguments that there would be benefits. Petition at 38-39. This argument, however, is completely belied by the assertions in Petitioner's supplemental brief that the Region "calculated the economic benefits in several different ways. "DEBP Suppl. Br. at 32. Because it is clear that the Region did calculate benefits, albeit in a manner challenged by Petitioner, we do not address this particular implication further.

262 Petitioner is apparently referring to U.S. EPA, Office of the Administrator, Pub. No. 240-R-00-003, *Guidelines for Preparing Economic Analyses* (Sept. 2000) [hereinafter *EPA's Economic Guidelines*].

263 UWAG also challenges several of the methodologies the Region used, in particular, its "per-person non-use value" analysis and its HRC method, arguing that they resulted in inflated benefit values. UWAG Br. at 14-23. To the extent that these specific issues were raised in the Petition, we will consider them. Those not raised in the Petition are untimely and thus are procedurally barred. *See supra* Part VI.A.3.b.iii.

264 UWAG presents an alternative argument, claiming that the Region, in its Determinations Document, explained that it used the wholly disproportionate test because the Agency had not withdrawn it, but that this was in fact incorrect as the Agency had in fact "rejected" the test. UWAG Br. at 23. In response, the Region argues that UWAG's assertions that the costing methodology was invalidated by the Agency in the Phase II rulemaking are irrelevant and incorrect. Reg. Suppl. Resp. at 35; *see also* CLF Suppl. Br. at 16.

Not only is UWAG's argument first raised during the additional briefing, and therefore procedurally barred, *see supra* Part VI.A.3.b.iii, but it also mischaracterizes the language in the *proposed* rule. In it, the Agency was merely *proposing* to alter the cost-benefit test for existing facilities and, in fact, had "invite[d] comment on whether a 'significantly greater' cost test is appropriate for evaluating requests for alternative requirements by Phase II existing facilities."Proposed Phase II Rule, 67 Fed. Reg. 17,122, 17,146 (2002). This language makes it clear that at the time of the proposal, although the Agency was considering

altering the test for existing facilities, the Agency had not "rejected" it. On the contrary, the proposal instructed permit issuers not to use the proposal as guidance, but to instead continue using the approach under which the Agency had been operating prior to the proposal. *Id.* at 17,124.

265 According to Petitioner, using the Region's final "use" values, "the cost of retrofitting the station with closed-cycle cooling would exceed the benefits by a ratio of 144 to 1," a ratio it asserts to be unreasonable under either standard. DEBP Suppl. Br. at 35.

266 UWAG additionally argues that even if the Region applied the correct test, it failed to articulate how it employed the test - in particular, what the standard is for "wholly disproportionate costs - therefore requiring that, at a minimum, the Final Permit should be remanded in order to allow for such an explanation. UWAG Br. at 25-29. In response, the Region contends that it *did* explain how it applied the test. Reg. Suppl. Resp. at 32. The Region further argues that this particular issue was not raised in the Petition and therefore should be considered waived. *Id.* & n.55. We agree with the Region's procedural challenge here: this particular argument was not raised in the Petition and thus is procedurally barred. *See supra* Part VI.A.3.b.iii.

267 The other three participants - Massachusetts, KRC, and TRWA - did not raise any significant arguments pertaining to these costs and benefits issues.

268 According to the Determinations Document, in deciding what technologies are "available" - as EPA has interpreted that section 316(b) statutory term - the Agency considers whether a technology that might be either directly or indirectly required is "technologically feasible." DPDD at 7-6. "A particular technology's feasibility may be demonstrated by an example of its use at another facility," or through other means such as "an appropriate pilot or bench-scale testing." *Id.* In addition, as part of the Agency's consideration of "available" technologies, EPA has interpreted section 316(b) to implicitly include "an economic 'practicability' test for BTA options." *Id.* at 7-7 (relying on legislative history for this interpretation). According to the Agency, "[a]pplying such a test to a facility-specific case-by-case determination * * * would mean that the cost of proposed BTA actions should not be financially impossible for a plant to implement and remain in business (i.e., 'should not impose an impracticable and unbearable burden' on plant operations)." *Id.*(citing Section 316(b) Rule, 41 Fed. Reg. 17,388 (Apr. 26, 1976) (remanded on procedural grounds and later withdrawn by EPA)).

269 UWAG argues that it is challenging this aspect of the Region's determination. *See* UWAG Br. at 23. In reading UWAG's arguments on this point, however, it appears that UWAG is actually questioning the Region's application of the wholly disproportionate standard, an issue that was raised in the Petition and which we address below. Accordingly, this particular argument of UWAG's will be addressed in the section addressing the application of the wholly disproportionate standard.

270 This second consideration of costs is connected to EPA's interpretation of the CWA section 316(b) statutory term "minimizing" (i.e., "[BTA] for minimizing adverse environmental impact"). DPDD at 7-14 to-15. According to the Agency, "once adverse impacts are beyond some de minimis level, there is no particular threshold of significance which must be crossed before the adverse impacts must be *minimized* by the application of BTA." *Id.* at 7-15 (emphasis added). Rather, "[t]he significance or magnitude of the impacts comes into play [] when considering whether the cost of undertaking actions to further minimize impacts is justifiable." *Id.* n.19. Thus, "less than complete elimination of all adverse effects could be appropriate if the effects are considered de minimis, if further reductions are not feasible with available technology, or if the cost of attaining these additional reductions would be wholly disproportionate to the benefits." *Id.*

271 According to the Region, benefits can be measured using three principal measures: (1) qualitative ones, (2) quantitative/non-monetary ones (such as pounds of pollutants removed from an industry's waste stream), and (3) monetary ones. RTC at IV-18. "Monetized" benefits refer to the latter measure, wherein benefits are expressed in monetary terms (i.e., dollars) where it is possible to quantify them. *See* DPDD at 7-135; *EPA's Economic Guidelines* at 59.

272 In this section of its response brief, the Region presents a series of arguments responding to Petitioner's assertion that the Region erred by failing to prepare a cost-effectiveness test. *See* Response at 99-103. As we mentioned earlier in our section 316(a) discussion, *see supra* notes 70 and 71 and accompanying text, Petitioner's arguments regarding the cost-effectiveness test clearly reference them in connection with "thermal discharges" and therefore only go to section 316(*a*). Consequently, we do not address them further here. For our discussion of this issue in the 316(a) context, see *supra* Part VI.A.1.d.

273 The Region also contends that not only are the Guidelines *not* intended to be used for the development of individual permits, they are not binding on the Agency because they are merely guidance. Response at 103.

274 Notably, the Region's (and CLF's) position seems to be that while the Agency is *authorized to and may* consider costs under

section 316(b), the Agency is not necessarily *required* to consider costs except perhaps in the consideration of "economic practicability." *See* Response at 24 (using such terms as "authorize" a consideration of benefits and "elect" to consider benefits); *see also* DPDD at 7-16 to-20 & nn. 20, 21. *But see* DPDD at 7-134 ("EPA is not required to conduct a cost-benefit analysis * * *. Instead, EPA *must* consider the cost of the BTA requirements.") (emphasis added). Because in this case the Region did consider costs, we do not address the question of whether the Region's position that it is not necessarily required to consider costs is erroneous. This point is connected with our discussion of Rhode Island and STB's arguments below. *See infra* note 286 and accompanying text.

275 The Petition does challenge the Region's *application* of the wholly disproportionate test, in particular questioning both the costs and benefits used as well as the use of the state WQSs. Petition at 33-39, 48-51. In challenging the Region's use of the test in its supplemental brief, Petitioner fails to acknowledge that it is raising a new argument and fails to provide any justification for raising such argument late. *See* DEBP Suppl. Br. at 32. Since the Petition did discuss the anticipated final rule and the Final Permit's alleged inconsistency with the rule, Petition at 6, it could be determined that this issue should have been raised in the Petition and thus should be dismissed as untimely, especially in light of Petitioner's failure to justify its late appearance in these proceedings. However, similar to our earlier conclusions with respect to Petitioner's late-raised arguments concerning the applicability of the new rule to the BTA standard, *see supra* Part VI.B.1.b.iv, because of the significance of the issue and recognizing that the Phase II Rule on which it was premised was issued only after the filing of the Petition, we choose not to reject it on procedural grounds but rather will consider Petitioner's late-raised argument.

276 We do not reiterate that Region's complete response, but merely highlight key points. Notably, the Region's response was similar to its explanation in the Determinations Document. *See* DPDD at 7-15 to-20.

277 This rule was later withdrawn by EPA following a remand to the Agency by the Fourth Circuit based on procedural grounds. *See* discussion *supra* Part VI. B.1.b.i. This language demonstrates, however, that the Agency's interpretation of section 316(b) to *not* require a formal cost-benefit analysis dates back to even before the *Seabrook I* decision.

278 In *Seabrook I*, the participants aligned themselves on this issue in a manner similar to the alignment here.

279 As the Administrator explained, "the Fourth Circuit held that a cost/benefit analysis was required under Section 304(b)(1)(B) with respect to the determination of what is 'best practicable control technology currently available' under Section 301(b)(1)(A); Section 304(b)(1)(B) expressly required the Agency to take into account 'the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application.'" *Seabrook I*, 1 E.A.D. at 339 (referring to *Dupont v. Train*, 541 F.2d 1018 (4th Cir. 1976)). A similar analysis is true of the "best available technology economically achievable" standard, CWA § 301(b)(2)(A), and the section instructing EPA to promulgate regulations for it, CWA § 304(b)(2)(B). *Id.* at 339-40.

280 Section 316(b) states that "[a]ny standard established pursuant to section [301] of this title or section [306] of this title and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact." 33 U.S.C. § 1326(b).

281 It appears that the "wholly disproportionate" test stems from the Administrator's use of the terminology in *Seabrook I*.

282 The Region cited to a number of courts that, in the BPT context, had agreed with the principle that the wholly disproportionate test was not of primary importance and did not require precise analysis, *e.g., Eli Lilly & Co. v. Costle*, 598 F.2d 638, 656-67 (1st Cir. 1979); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1049 (D.C. Cir. 1978); *see also Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 203-07 (5th Cir. 1989) (hereinafter "CMA") (rejecting arguments that EPA must do a "knee of the curve" cost-benefit analysis), and that had stated that EPA had broad discretion in "deciding exactly how to evaluate benefits and costs and in determining the point at which costs become 'wholly disproportionate' to the benefits," *e.g., CMA*, 870 F.2d at 206, 207; *Eli Lilly*, 598 F.2d at 656-57; *Am. Iron & Steel Inst. v. EPA*, 568 F.2d 284, 297 (3d Cir. 1977). RTC at IV-16; *see also* DPDD at 7-18 to-20.

283 In the new Phase II Rule, which, as we have noted several times, was issued after the Region's issuance of the Final Permit, the Agency appears to have modified its "cost-benefit" test from the "wholly disproportionate" to the "significantly greater" standard for existing facilities, at least in some circumstances; the rule itself so indicates. Phase II Rule, 69 Fed. Reg. 41,613-14, 41,627 (establishing an exception to performance standard based requirements on a site-specific basis in limited circumstances when the costs of complying with the national performance standards are "significantly greater" than the benefits of compliance at a particular site); *see also* Proposed Phase II Rule, 67 Fed. Reg. at 17,124 ("Today's proposal also would establish a cost-benefit test that is different from the 'wholly disproportionate' cost-benefit test that has been in use since the 1970s.").

284 As we have previously noted, Petitioner has expressly stated that it is not requesting the rule be retroactively applied to B PS. *See, e.g., supra* Part VI.B.1.a.

285 First, it is clear from the preamble to the proposed rule that the Agency intended the regional offices to continue to use BP J to develop permit limitations while the rulemaking was progressing and not to use any of the new principles that may have been articulated in the proposal. If anything, Petitioner's arguments about the cost -benefit standard carry less force than its previous arguments regarding the BTA stand ard. With respect to the latter, Petitioner had at least a colorable argument that the Phase II Rule merely *codified* a previous interpretation of BTA as opposed to altering it. Petitioner did not argue that the cost -benefit standard in the Phase II Rule is merely a codification of an earlier Agency position, nor could it, as it is clear that the Agency adopted a new standard in the Phase II Rule. *See supra* note 283.

286 This issue raises procedural concerns similar to those we previously found with respect to CLF's (and KRC's) CWA section 316(a)-based argument that the Region erred by allegedly granting a variance that was less stringent than the applicable s tate WQSs. Rhode Island's and STB's arguments here are actually the flip side of Petitioner's argument: the Petition raised concer ns that the Region failed to properly calculate costs whereas the other two participants argue that the Region should not have calculated costs at all. This latter argument was reasonably ascertainable and could have been raised in a petition. As we mentioned earlier, where a participant, in a responsive brief, raises an issue that is beyond the scope of the petition, the issue i s procedurally barred. *See* analysis and discussion *supra* Part VI.A.3.b.iii. As we also pointed out earlier, in this case we specifically instructed participants to limit their arguments to those issues contained within the Petition. Order Granting Review at 9 n.14, 10 n.15.

287 The Region hired SAIC to provide expert analysis in assessing the "'engineering aspects' of the cost of the technology alternatives."DPDD at 7 -76. The Region then independently reviewed the reports submitted by SAIC, found them to "contain reasonable and appropriate analyses, " and explicitly adopted them in its Determinations Document. *Id.* at 7 -78.Although we generally use the two entities interchangeably, we tend to refer to the Region when referring to the Determinations Document and Response to Comments document and refer to SAIC when referring to the underlying analyses prepared by SAIC.

288 Thus, SAIC did not selectively use matching costs; it used all matches that it found. DPDD at 7-79.

289 In its analysis, SAIC indicated that "[i]n most cases the Cost Works labor rate and man hour estimates are much lower than [Petitioner's] estimates."DPDD at 7-80. SAIC also pointed out that these types of difference would also be expected for the other line items, i.e., those where SAIC was not able to find comparable costs in the Cost Works database. *Id.*

290 In addition, it appears that a representative of the entity overseeing the database reviewed SAIC's values and reported that the numbers SAIC and the Region used were higher than numbers he would ha ve used, suggesting that the Region's values were on the high side, rather than on the low side as Petitioner alleges. RTC vol. II, app. O, at 6, 9.

291 As we noted earlier, *see supra* note 114, it is not our job to scour the record in order to make arguments on behalf of the participants. *E.g., In re Phelps Dodge Co.*, 10 E.A.D. 460, 507 n.39 (EAB 2002) ("It is not our duty in an adversarial proceeding to comb the record and make a party's argument for it.").

292 The Region argues that it raised the baseline costs by 30% for retrofitting at an existing facility and also added a 25% increase "for an option that involved piping and pump -related capital costs necessary " to provide for the multi -mode capability. Response at 149. The Region states that it is unc lear to which of these factors Petitioner is referring. *Id.* at 150.Upon review of the Stone & Webster Comments referred to by Petitioner in its arguments, it is clear that Petitioner is questioning the 25% increase for the piping. *See* Stone & Webster Comments at 18-19. Thus, we consider the 25% "piping factor" in our analysis.

293 Petitioner raised concerns with respect to the costs of the retrofit with more particularity in other sections of its briefs as well. We address those arguments elsewhere in this decision. *See, e.g., supra* Part VI.B.4. b.ii.*d*(1), (2).

294 Although UWAG asserts that it submitted comments concerning the 316(b) Rule-Based Analysis to EPA Headquarters in response to the Proposed Phase II Rule, it do es not claim to have submitted them to the Region in connection with BPS's permit. *See* UWAG Br. at 9. As we have mentioned previously, *see, e.g., supra* Part IV, in order to preserve an issue for appeal, a petitioner must demonstrate that it raised all reas onably ascertainable issues and arguments during the public comment period for the permit. 40 C.F.R. § 124.19(a); *see also, e.g., In re Westborough*, 10 E.A.D. 297, 304 (EAB 2002). Raising the comment in the context of an Agency rulemaking rather than a specific permit decision is not sufficient to meet this standard. *See NRDC v. EPA*, 863 F.2d 1420, 1429 n.7 (9th Cir. 1988) ("[R]equiring each EPA Region to consider all the comments relating to the national rulemaking in each BPJ permit would impose an unreasonable burden on the agency."); *cf. In re Kendall New Century Development*, PSD Appeal

No. 03-01, slip op. at 20 (EAB Apr. 29, 2003), 11 E.A.D. ___ (rejecting request that testimony submitted and part of administrative record in another permit proceeding should be considered in the present permit appeal because such a rule would impose an unduly onerous, costly, and burdensome obligation on permit issuer). As we mentioned above, however, Petitioner asserts that, during the comment period on BPS's permit, it submitted certain criticisms about the 316(b) Rule-Based Analysis to the Region that had been raised in the context of the national rulemaking. The Region admits that the Petitioner did indeed forward such comments. Reg. Suppl. Resp. at 35 n.61. On appeal, we consider only those issues for which comments were actually submitted to the Region during the comment period on the permit; we will consider these as having been preserved for review.

295 UWAG raises two additional issues that were not raised in the Petition: (1) UWAG asserts that, using a proprietary model its consultant has developed, it estimates the cost of retrofitting BPS would likely be somewhere between $205 to $300 million, *id.* at 10 n.4, and (2) UWAG questions the use of a 20% retrofit factor that the Region allegedly added on without explanation or justification, *id.* at 9. (As an aside, the Region points out that it used a 30% retrofit adjustment factor, not a 20% one. *See supra* note 292.) These two issues were not raised in the Petition and thus are procedurally barred. *See* discussion *supra* Part VI.A.3.b.iii. In addition, there is no evidence that the first issue was raised during the comment period for the permit. As we discuss in the previous footnote, failure to raise a reasonably ascertainable issue during the comment period acts as a procedural bar on appeal. With respect to the second issue, the retrofit adjustment factor, we note that the Region did apparently receive comments on this question during the comment period, *see* RTC vol. II, app. O, at 3, to which the Region responded, *see id.* at 3, 5. The Region explained that the retrofit factor is a national estimate developed in conjunction with the section 316(b) rulemakings to "cover the differences in costs between greenfield and retrofit situations," and was developed based on BPJ and case studies. *Id.* at 3;*see also* DPDD vol. II, tab 1 at 13 & tab 2 at 25 (stating that the Region used a 30% retrofit factor consistent with the proposed Phase II Rule); RTC at 7-80 to-82 (background on the development of the cost estimate). The Region indicated that it had selected the upper end value for the BPS permit. RTC vol. II, app. O, at 3. In its explanation, the Region also pointed out that Petitioner (through its consultants) had not proposed an alternative factor they believe to be appropriate for use instead. *Id.* Neither has UWAG. Thus, even if this issue had not been procedurally barred, we would have concluded that the Region had provided an acceptable rationale regarding this retrofit factor and adequately responded to comments about it to the degree of specificity warranted by the comments themselves. RTC vol. II, app. O, at 2-3, 5.

296 We have already addressed Petitioner's challenges to the labor costs and the retrofit costs. *See supra* Part VI.B.4.b.ii.b(1), *.c.*

297 According to Petitioner, the difference between its and the Region's downtime estimates results in a $17 million cost differential. Petition at 50 (referring to A.R. 3263, Ex. 33, vol. II, tab 5 at 14 (Comments of Dr. Robert N. Stavins Regarding Economic Analysis Supporting the NPDES Permitting Determination for BPS (Oct. 4, 2002)) [hereinafter "Stavins Comments on Draft Permit"]).

298 Both citations to which Petitioner refers in support of its assertions do not, in fact, support those assertions. The first document cited - which is referred to in the Petition as "*id.* at 13" - presumably refers to page 13 of the Stone and Webster Comments, which was the immediately preceding document cited in the Petition (and therefore the document to which Petitioner's "*id*" should refer). Page 13 of Stone and Webster's Comments is not on point, however. That particular page discusses the labor rates used by SAIC in the Independent Line Item Analysis, not the Region's alternate design or construction outages associated with it. *See* Stone & Webster Comments at 13.
With respect to Petitioner's second citation (i.e., "Stone & Webster, Response to Page 13 of App. O"), we are uncertain as to which document Petitioner is referring. There does not appear to be a document attached to the Petition with that name or that indicates it was written by Stone and Webster. It is possible that Petitioner may be referring to a comment in Table 2 accompanying the Petition which describes an alleged error at page 13 of Appendix O, but there is no indication that the comment was written by Stone and Webster. *See* Petition, Tbl. 2 at 13. If this *is* the citation to which Petitioner intends to refer, then we merely observe that we have addressed the issue with which this comment is concerned - i.e., the difference of opinion between the expert over the selection of the design - below.

299 According to SAIC, Petitioner only used this method in its preferred approach, using another method - which apparently leads to the longer downtime estimates - in evaluating the entire facility closed-cycle approach. *See* RTC vol. II, app. O, at 13.

300 SAIC's design moves the pumps further away from the existing once-through "seal pits," unlike Petitioner's designs in which the pumps are at the same location as the once-through equipment. *See* RTC vol. II, app. O, at 13-14. Petitioner's approach apparently would cause a much longer downtime. *See id.*

301 According to SAIC, Petitioner had argued that the Region's design is "inconsistent with site conditions, is without any basis or analysis, raises significant engineering issues, and offers no information that the design is feasible," without providing supporting

details. RTC vol. II, app. O, at 13. SAIC does not cite to where in the administrative record this comment is located. As we explain above, *see supra* note 298, Petitioner has not cited to any comments that it or its consultants submitted on this point. *See* Petition at 50. The only documents Petitioner cites in the Petition do not support its contention that its consultants determined the Reg ion's design to be "infeasible": the comment page cited by Petitioner in its Petition - page 13 of Stone and Webster's Comments - raises concerns about SAIC's Independent Line Item Analysis rather than construction downtimes, and the other citation is to a document prepared after the Final Permit was issued and therefore could not have been the comments to which SA IC referred. *See id.*;*see supra* note 298. It is not our duty to scour the record to find support for one of the participant's positions, *see supra* note 114, and thus we will not do so here. Accordingly, we assume that SAIC's interpretation of the Region's a nd its consultant's comments is correct and that those comments were merely conclusory assertions generally disagreeing with SAIC's analysis.

302 The Regio n's memorandum considering Petitioner's additional cost information based upon the DOE report also discussed construction outages. Houlihan Memo at 4 -6. Notably, the memorandum states that "the DOE Material does not indicate that longer outages should be estimated for BPS. If anything, the opposite is indicated."*Id.* at 4.

303 Petitioner also alleges that the noise mitigation cost estimate "was not based on c ooling towers equipped with plume abatement equipment," which allegedly "would have additional effect on noise. "Petition at 51 n.40. The Region responds by asserting that this is the "first time the Petitioner has stated that [the] Region should have asses sed the noise impacts and associated costs of plume abatement controls. Petitioner has also never provided any assessment of its own on what noise emissions from plume abatement towers would be and how much it would cost to mitigate them. "Response at 152. Petitioner does not respond to the Region's procedurally-based claim, nor does it point to anywhere in the record demonstrating that this comment was, in fact, raised during the comment period. As we have mentioned previously, a threshold issue on appeal i s whether a petitioner has raised all reasonably ascertainable issues during the comment period. *See, e.g., supra* Part IV & n.29. As the Region states, the Determinations Document did identify the issue of managing potential plume impacts as well as discussing the possibility of plume abatement. *Id.* at 152 -53 (citing DPDD at 7 -33 to -34,-48 to -53). Thus, the issue was reasonably ascertainable. Accordingly, because Petitioner does not demonstrate that it raised this issue during the comment period, it is procedurally barred on appeal.

304 In its cost estimates, the Region did include some costs for noise mitigation equipment. RTC at IV -84. The issue is whether additional mitigation measures will be needed, thereby increasing costs over those already estimated and included in the fina l overall cost estimates.

305 Apparently, MA DEP, in conjunction with BPS, at some point in the future, will perform a review of "the potential noise impacts in comparison to existing background noise levels " and will include an examination of the "source of additional noise; ways to minimize noise; and whether or not noise impacts can be addressed beyond the property boundary of the noise source, if the impacts were to exceed the applicable guidelines."RTC at IV-83.

306 The Region made it clear that its conclusion about the states' WQSs and the standards' connection to the benefits analysis wa s separate from the Region's analysis under the state certification provisions of the Act. At th e end of its discussion of state WQSs, the Region specifically noted that "[o]f course, EPA will carefully review the water quality determinations by each state under CWA § 401 in order to verify how the states interpret and apply their own water quality s tandards to this situation. "DPDD at 7-129.

307 The Benefits Transfer analysis looked at commercial fishery impacts, recreational fishery impacts, and forag e species losses in monetary terms. DPDD at 7 -138. Commercial fishery impacts are, at least in part, based on "commodity prices for the individual species."*Id.* Recreational fishery impacts are based on values in the literature in which persons provide a va lue for their "willingness-to-pay" for increases in recreational fishing catch rates for a species. *Id.* at 7-139.The economic value of forage fish was based on either a production foregone method or a replacement cost approach to hatch and/or restock the f ish. *Id.* at 7-139 to-140.

308 The PPNV analysis considers the benefits to identified users and non -users "from improved protection of aquatic resources in Mount Hope Bay."DPDD at 7-146. The benefit values are developed on a per-person basis. *Id.* at 7-147.

309 The HRC Analysis essentially attempts to estimate the minimum restoration (i.e., replacement) costs necessary to offset the f ish lost to the BPS cooling water intakes. DPDD at 7-156.

310 For example, we have already considered Petitioner's contentions that its consultant's biological assessment was better than the Region's assessment. *See supra* Part VI.A.3.b.ii.*e*.

311 Moreover, as we already mentioned, we addressed many of these scientifically-based arguments elsewhere in this opinion, finding them unpersuasive.

312 On pages 38 and 39 of its Petition, Dominion alleges that the Region took the position that "it does not have to calculate benefits at all," Petition at 38, and made only conclusory, qualitative remarks about benefits, *id.* at 38-39. However, upon reviewing the pages of the Response to Comments document to which Petitioner cites in that section of its brief, *see id.* at 38-39 (citing RTC at IV-21,-22), we conclude that Petitioner is in essence challenging the Region's statements that it need not perform a *monetized* benefits assessment. The referenced pages of the Response to Comments document contain the Region's "quantitative, non-monetized" and "non-monetized qualitative" benefits assessments. *See* RTC at IV-21,-22. Moreover, nowhere on those pages do we find anything suggesting that the Region took the position that it did not have to do any kind of benefits assessment. The Region did, however, note that there was no precedent indicating that the Agency had ever considered *monetized* benefits. *Id.* at IV-18.

313 The Agency did monetize use benefits for the Final Phase II Rule. *See* 69 Fed. Reg. 41,624.

314 Table 3 accompanying the Petition also contains numerous detailed challenges to the Region's comments about its non-use values. *See* Petition, tbl. 3 at 2-11, 13-23. This table appear to contain a laundry list of all the comments Petitioner's consultant submitted during the comment period on the Draft Permit - mostly on technical matters related to economic analyses and/or the Region's benefits analyses - for which the Petitioner's expert still disagrees with the Region's and its experts' responses or for which Petitioner alleges the Region did not provide a sufficient reply. These do not demonstrate that the Region did not respond to the comments; rather they indicate a disagreement between experts on technical matters. As such, we look to see whether the Region duly considered the comments and whether its approach was reasonable in light of the record. Upon review of the record, including the Responses to Comments document and all its appendices, we find that, although the Region and its consultants may not have addressed each comment individually, the record demonstrates that the Region did consider the issues raised by these comments, and that the Region's approach was reasonable

315 We address Petitioner's procedural arguments about the non-use value analyses below in Part VI.B.4.b.iii.*d.*

316 The Agency's statement that it relied on a qualitative analysis of non-use benefits also suggests that qualitative benefits are not zero, contrary to what Petitioner and UWAG would like us to conclude.

317 Petitioner's reliance on *In re S.D. Warren Co.*, 3 E.A.D. 727 (Adm'r 1991), is unavailing. In that case, the permittee challenged a condition of its RCRA corrective action permit requiring it to propose Media Protection Standards. 3 E.A.D. 730. This requirement was based on a complex and restrictive regulatory provision governing hazardous waste management units, 40 C.F.R. § 264.94 (1991). The permittee argued that another more flexible Agency policy, developed in 1989, which governed solid waste management units, was applicable to this condition as well, but that this policy had not been used by the Region in the development of its permit. 3 E.A.D. at 730. The Agency had also issued a proposed rule governing corrective actions in 1990 that followed the approach used in its 1989 policy. *Id.* at 731. The Administrator remanded the permit based upon this issue, stating that "[c]ontinued use of the § 264.94 approach is not invalid per se, but the Region has failed to explain why the permit deviates from Agency-wide policy, as expressed in the 1989 guidance (and now in the Subpart S proposal), to follow a more flexible approach." *Id.* at 732. The Administrator further noted that "[t]his is not to suggest that a permittee may file a successful permit appeal every time the Agency solidifies a new policy after the issuance of its permit. In this case, however, the abandonment of the § 264.94 standards in favor of a more flexible approach * * * is central to the Agency's current corrective action policies. Moreover, this development was underway at the time [the] permit was issued." *Id.* at 732 n.14.
The facts in the current case do not present us with the same level of concern as that which arose in *Warren*. In the present case, there is no evidence that the Agency has "solidified" a new policy about the HRC or PPNV methods. Instead, the Agency declined to use them in the economic assessment in one of its rules. As we have noted, in its decision not to use those methods in the final Phase II Rule, the Agency did not definitively establish a policy regarding their use or possible use in the future. Furthermore, unlike *Warren* where the policy had apparently been published before issuance of the permit, here the final rule in which the Agency declined to use the methods was published *after* the permit was issued. Additionally, here the Agency-wide process that was ongoing during the permit's development was the proposed rule, which itself used these methods. Finally, here, unlike the permit in *Warren*, the Region did provide a lengthy explanation of why and how it used these methodologies in its overall analysis. For all these reasons, we do not believe the facts here warrant a remand of the permit.

318 Petitioner also questions the fact that the Region's non-use values of Mount Hope Bay far outweigh the revised use values, accounting for 99.6% of the final benefits estimated by the Region. Petition at 37; DEBP Suppl. Br. at 34. Petitioner claims such calculations are "facially unreasonable." Petition at 37. It does not appear that Petitioner made this comment in its comments on the

Draft Permit. Petitioner, although generally citing to approximately 15 pages of its comments, does not point to the precise location of this particular comment (or an analogous one based on the previous estimates of the use and non -use values) and we do not see it. Petition at 37 (citing Stavins Comments on Draft Permit at 30 -39; Ex. 17, A.R. 3248, Ex. B (Robert N. Stavins, Comments on the Implications of EPA's 316(b) Phase II Notice of Data Availability for EPA Region I's Economic Analysis of the Draft NPDES Permitting Determination for BPS (July 29, 2003) at 16 -22 [hereinafter Stavins Comments on NODA Implications]). As we have stated previously, we will not "scour the record " in order to make arguments on behalf of participants. *See supra* note 114. Additionally, it is unclear whether Petitioner intended to raise this as a particular concern or whether it was merely a larger part of a challenge to the Region's reliance on non -use benefits. Insofar as Petitioner intended the latter, we have already discussed in the previous section of this opinion.
Consequently, because we cannot find that Petitioner rai sed this comment below, we find it to be procedurally barred and do not address it further except to observe that the Region did generally reply to more general comments about the relationship betw een the two values. *E.g.*, RTC at IV -26 ("In some cases, the non-use values may represent the bulk of the monetized estimate of total value."); *see also* DPDD vol. II, app. 11, at 1 (same); DPDD at 7 -140 to -141 (explaining the importance of considering non -use values).

319 Generally, "an agency statement, not issued as a formal regulation, binds the agency only if the agency intended the statement to be binding."*Farrell v. Dep't of Labor*, 314 F.3d 584, 591 (Fed. Cir. 2002) ; *accord United States v. Alameda Gateway Ltd.* , 213 F.3d 1161 (9th Cir. 2000). There has been no suggestion that *EPA's Economic Guidelines* were issued as a formal regulation, and as we observe in the text *infra*, the guidelines themselves state that they are not intended to be binding. *E.g., EPA's Economic Guidelines* at 2.

320 Petitioner claims that the correct amount is 180,000 pounds of fish lost rather than the 54 million pounds stated in the Determinations Document. Petition at 45. This latter figure, however, is apparently *Petitioner's consultant's estimates* , not the Region's. *See id.* tbl. 1 at 39 (citing BPS Comments on Draft Permit vol. II, at II-19).

321 The Region's consultant also stated that the production foregone estimates were not a critical component of EPA's benefits analysis for BPS. RTC vol. II, app. X, at 2.

322 Because Petitioner did not raise any specific substantive challenges to the PPNV method in its Petition, we do not specifically address substantive PPNV issues that may have been raised by other participants, beyond the procedural issue discussed in thi s section. Inte restingly, however, the Region pointed out that its PPNV analysis was based on an approach for which one of Petitioner's consultants, Robert Stavins, was the principal author. RTC at IV-28.

323 While true that one portion of one of the Region's responses was relatively short as alleged by Petitioner, *see* Petition at 38 (claiming that the Region merely stated that it "disagreed" with the comment and then "referr [ed] the reader back to the same section of the Determination[s Document] on which the criticisms were based " (citing RTC at IV -56)), in that same response, the Region refers to other places in the record and its Response to Comments document that furt her discuss the issue. RTC at IV -56 (referring to the DPDD and earlier portions of the response document). An examination of these other record locations, especi ally the Response to Comments document, demonstrates that the Region did discuss these issues m ore fully elsewhere. *E.g.*, RTC at IV-23 to-31; *id.*, vol. II, apps. E, H. Consequently, Petitioner's arguments on this point are without merit.

324 Notably, both the Region and Petitioner hired expert consultants to do the economic analyses.

325 Petitioner's argument, moreover, is essentially another challenge to the Region's position regarding the scope of its benefits and cost-benefit analyses under CWA section 316(b), which we have already considered. *See supra* Parts VI. B.4.b.i, VI.B.4.b.iii.*c*.

326 Although Petitioner does not specify how it arrived at its 144:1 ratio, we assume that Petitioner's calculation is premised o n these same values.

327 Significantly, the Region, in its Determination Document, explained that it did not perform its monetized analysis to "provide numeric values that will be strictly determinative. "DPDD at 7 -135. In other words, the Region did not intend that a numeric ratio be calculated based strictly on its monetized benefits values when non -use and qualitative benefits existed which could not be easily factored in with the benefits. *See id.*Such a calculation would not be a fair assessment.

328 To the extent that we do not specifically address an issue in this decision that may have been raised in the Petition or in t he tables attached to the Petition, we do not find error as to such issues.

329 Petitioner also seems to imply that the Region erred in not considering Petitioner's July 3, 2002 submission prior to issuing the Draft Permit several weeks later on July 22, 2002. Petition at 14. There are several facts of note here concerning Petitioner's July 2002 submission. First, the NPDES permit under which BPS is currently operating expired in July 1998. Second, Petitioner's permit application had been due in early 1998, six months prior to the permit's expiration. Third, although Petitioner had submitted a permit renewal application at the designated time, there had been substantial back and forth between the Region and Petitioner, including the continued submission of information by Petitioner. The 2002 submission, therefore, was a rather late addition to the earlier permit application. As a practical matter, in the case where an applicant continues to submit additional and updated information in support of its permit application, if the permit issuer does not at some point stop consideration of the incoming documents and issue a draft permit, such draft permit might never in fact be issued. In this case, four years passed before a draft permit was issued. Had the Region considered the July submission, the Draft Permit issuance would have undoubtedly been further delayed and, if new information had been submitted by Petitioner in that additional time period, that may have engendered additional delays. Moreover, the Region, in its Determinations Document, did provide a lengthy and thorough analysis of the facts and issues surrounding Petitioner's permit application. Consequently, we do not find that the Region clearly erred by not delaying issuance of the Draft Permit to consider Petitioner's additional submission that arrived several years after the application was due and a few weeks prior to the Draft Permit issuance date. Furthermore, as we explained previously, the Region did eventually consider this document prior to issuing the Final Permit, as evidenced by the Region's discussion of it in its Response to Comments document. *See supra* Part VI.B.3.b.i.

330 Petitioner, in fact, challenges several aspects of the revised benefits analyses in its Petition. Petitioner claims that the new methods are "no more consistent with *EPA's Guidelines* for Economic Analyses or sound economic practice than were the calculations used by [the Region] to support the Draft Permit."Petition at 17. Petitioner further challenges the Region's non-use values estimates as being too high. Petitioner's claims are not persuasive. Petitioner's claims regarding the significance of *EPA's Economic Guidelines* and Petitioner's questioning of the Region's non-use values calculations are essentially the same issues it raised in other sections of its Petition, which we have already considered and found not to demonstrate clear error on the part of the Region. *See supra* Part VI.B.4.b.iii.*c*(1), (3).

331 The Region acknowledges that "[t]he issue of possible vapor plume emissions from the cooling towers is an important secondary effect that the Region evaluated in determining BTA conditions under CWA [section] 316(b)." Response at 153. Vapor plumes can create fog that could lead to visibility and traffic safety issues (from ice or fog) as well as causing aesthetic impacts. *Id.* The Region thoroughly analyzed the issue in its Determinations Document, DPDD at 7-44 to-53, and also had one of its consultants provide a further analysis in response to comments. RTC app. M; *see also id.* at IV-77 to-81.

332 Petitioner is probably referring to three cooling towers consisting of a total of 72 "cells." *See* DPDD at 4-48.

333 Petitioner later argues that the Region clearly erred in stating that it "may be possible" to move the cooling towers to the southwest corner of BPS's property in order to reduce noise impacts. Petition at 52. Petitioner claims that moving the towers to the southwest corner would be inconsistent with MA DEP regulations and would dramatically increase the cost of the towers due to piping requirements. *Id.* We do not see how the Region's statement that something "may" be possible can constitute clear error because the something is allegedly not possible after all. Obviously, if something may be possible, it also may not be possible. We are therefore unpersuaded by Petitioner's argument on this point.

334 Petitioner raises similar issues about the plume analyses in a subsequent section of its Petition. Petition at 51-52. We combine those factual challenges with its mixed procedural/factual challenges and address them here.

335 Apparently, the outside consultants, upon analyzing Petitioner's consultant's estimates regarding the cooling towers, concluded that they were overestimates, finding that either 56, 58, or 66 cooling tower cells would be needed. RTC at IV-86.

336 Moreover, even if we had found that the Region's consultants' analyses were material to the Final Permit determinations, we would have concluded that the Region had not abused its discretion. The Region's analyses were conducted in response to comments and did not raise substantial new questions.

337 In addition, among other things, MFG also found it likely that Petitioner's studies were performed with assumptions involving much greater water vapor emissions than would ever occur at [BPS], " RTC app. M at 4, and that Petitioner's consultants likely overstated the impacts of the cooling towers on fogging and icing due to failure to adequately consider existing fog and ice/snow conditions," *id.* at 9.

338 In fact, the Region "estimated costs for a number of different options, largely depending on what approach is adopted to address

any possible issues related to hazards from cooling tower vapor plumes."RTC at IV-34.

339 For instance, as we indicated above, Petitioner points to certain limitations in the SACTI model. *See* Petition at 19. We note that MFG pointed out that the SACTI model had a number of limitations and the Region indicated that the scope of the vapor plume issue was unclear. Petitioner's argument does not persuade us that the Region clearly erred in its plume analysis by considering the SACTI model while recognizing its limitations. Petitioner also claims that the Region substantially underestimated the number of hours of fogging and ice. *Id.* at 51.This is a technical issue upon which Petitioner and the Regi on disagree. As we have explained several times in this opinion, the Region's technical judgments and conclusions are entitled to deference and we therefore "look to determine whether the record demonstrates that the Region duly considered the issues raise d in the comments and whether the approach ultimately adopted by the Region is rational in light of all the information in the record. "*See supra* Part IV; *see also, e.g. In re Gov't of D.C. Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001). We have examined the Region's analysis in the Determinations Document, Petitioner's comments on this issue, and the Region's responses to Petitioner's concerns in its Response to Comments. We find that the Region's conclusions were adequatel y explained and supported in the record. We also find that they are rational in light of the scientific information in the record. Accordingly, we conclude that the Region did not clearly err in its technical analysis of the frequency of fogging and ice. N one of Petitioner's other factual concerns persuade us that the Region clearly erred in its plume analysis. *See* Petition tbl. 2, at 1-2, 7, 10.

340 The noise generated by the mechanical draft cooling towers may be a concern when towers are located close to sensitive "receptors" (e.g., residences). DPDD at 7-43.

341 Petitioner makes a similar argument about the NIA in a later section of its Petition enumerating various a lleged "legal errors." Petition at 27. We combine and address here Petitioner's two sets of arguments concerning the NIA analysis. Another related i ssue - the *cost* of the mitigation measures - was already discussed in this opinion. *See supra* Part VI.B.4.b.ii.*d*.(2).

342 Petitioner cites to Attachment D of its Petition in support of this assertion. We previously concluded that this document is not appropriately considered part of the administrative record, *see supra* Part V.A.3. g, and thus we do not consider it here. It does appear, however, that the language of the Massachusetts noise regulation supports Petitioner's interpretation.

343 Although the Region cited to several documents, it is not clear that the Region performed a detailed analysis of BPS's impact s at the time it issued the Draft Permit.

344 In its *Final 316(a) and (b) Demonstration* submitted along with its NPDES permit application, Petitioner had proposed an option that would have required a 20-cell cooling tower to be installed. DPDD at 4-52.

345 The Region argues that Hatch consulted with Massachusetts and followed the state's analytical approach. Response at 59 n.47 (citing RTC app. L, at 2). While it is true that Hatch mentions that it consulted the state in obtaining ambient nois e levels, *see* RTC app. L, at 1-2, there is no indication in the report that Massachusetts considered Hatch's analysis and concurred in its entirety. Nor has the Region cited to any document submitted by Massachusetts and placed in the administrative record that would suggest that the state specifically analyzed or addressed Hatch's conclusions.

346 It is unclear, for example, whether Massachusetts would incl ude existing background noise, including the noise generated by the facility in its current configuration, as "ambient" noise. Moreover, if the state considers the "source of sound" to be the entire facility and not just the cooling towers, which itself is another question Petitioner raises on appeal that is not clearly addressed in the record, it is unclear whether the expected noise levels generated by the entire plant's operations as a closed -cycle cooling facility would likely increase ambient noise lev els more than 10 dB(A). Although Hatch may have included the other likely noise levels from BPS's closed -cycle cooling operations in its analysis, it did not clearly so indicate. The appendix containing Hatch's detailed calculation notes that the new noise levels were estimated by "simple energy addition" of the sound level calculated for the cooling towers and the existing noise levels. *See* RTC app. L, app. C. The discussion of the existing noise level measurements does not indicate whether these measureme nts include noise levels from BPS's current operations and if so, whether these noise levels would be the same once BPS was converted to closed -cycle cooling. *See id.* at 1-2.There is also some mention of air pollution controls increasing the sound levels slightly (e.g., from 1 to 3 dB(A)), *id.* at 1, but these do not appear to have been included in the final calculations because Hatch concluded that these predicted noise levels could overestimate the background noise levels, *id.* at 4. Even if we were to agree with this assumption, which, notably, Petitioner challenges on appeal, Petition tbl. 2, at 9, there is still the question of whether the noise levels from the rest of BPS's equipment would significantly increase Hatch's estimated values.

347 We do not find that the Region abused its discretion in declining to reopen the comment period. However, while the Region was within its discretion to decline to reopen the comment period upon receiving Petitioner's noise analysis and preparing an extensive

analysis in response, it ran the risk, as occurred here, that a petitioner could, on appeal, raise significant issues regardi ng the new information that were not ade quately addressed in the existing record. *See In re NE Hub Partners, L.P.* , 7 E.A.D. 561, 587 n.14 (EAB 1998) (explaining that appeal to the Board was the appropriate recourse to take to challenge information the Region added to the record in response to comments); *see also In re Caribe Gen. Elec. Prods., Inc.*, 8 E.A.D. 696, 705 n.19 (EAB 2000) (explaining that the appellate review process provides petitioner with the opportunity to question the validity of material in the admini strative record, including new information added by the permit issuer in response to comments).

348 This, however, may not be completely clear as currently written in the Final Permit. Although note 5 of § 1.A.4.a specifies that the heat load is to be calculated using Outfall 001 "[f]or periods of once-through cooling," an analogous limitation that heat load is not to be measured using Outfalls 003A, 003B, and 003C during once-through cooling is not explicitly included in §§ 1. A.5.a, 1.A.6.a, and 1.A.7.a. The Region may want to clarify this in the Final Permit while it is on remand.

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